192

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DeWald	DT-162R, DT-163A, R, DT-190D, ET-140R, ET-141R, ET-170, ET-171, ET-172, ET-190D, FT-200, FT-201 Tel. Rec. Prod. Chg. Bul. 58	192-1
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Westinghouse	H-689T16 (Ch. V-2214-1) Tel. Rec. Prod. Chg. Bul. 58	192-1

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DENVER, COLO.

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 7 IN SET 136

DEWALD MODELS DT-162R, DT-163A, R, DT-190D, ET-140R, ET-141R, ET-170, ET-171, ET-172, ET-190D, FT-200, FT-201

Dewald Models DT-162R, DT-163A, R, DT-190D, ET-140-R, ET-141R, ET-170, ET-171, ET-172, ET-190D, are covered in Photofact Folder 7 in Set 136. Two new models have been added which are electrically identical to these models. They are FT-200 and FT-201.

In later production of these models the following changes were made.

In some models C83, 500MMF high voltage filter capacitor, is returned to the plate (Pin 5) of the damper tube, V17.

R94, B + filter resistor, was omitted in later production.

The picture tube cathode circuit was also revised. The brightness control (R2) was changed to 100K, R43 was omitted and a 180K resistor was added between the center terminal of the brightness control and the picture tube cathode. C49 is returned to ground instead of the junction of R61 and R62. A partial schematic of the revised circuit is given on the reverse side.

(Continued on Reverse Side)

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 15 IN SET 167

WESTINGHOUSE MODEL H-689T16 (Ch. V-2214-1)

Ch. V-2214-1

Westinghouse Model H-689T16 using Chassis V-2214-1 is similar to Model H-667T17, Chassis V-2216-1, except for the following:

A 16" picture tube (16EP4A) and a different deflection yoke are used in Ch. V-2214-1.

The horizontal hold and brightness controls were located on the back of the chassis rather than on the front and the shafts on the volume and contrast controls are shorter due to a different mechanical arrangement.

The pilot light (M1) is omitted in this chassis.

The following parts are used in lieu of the corresponding parts on the H-667T17 parts list.

ITEM	PART NO.	FUNCTION
R1A	V-9877-1 *	Contrast Control, 15K
R1B	V-9877-1 *	Volume Control, 500K
R2	V-10509-1	Horiz. Hold Control, 125K
R3	V-9916-1	Brightness Control, 50K
T4	V-10911-1	Deflection Yoke

* Complete unit, contains R1A, B and On/Off switch.

PRODUCTION CHANGES
BULLETIN 58

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 6 IN SET #168

CROSLEY MODELS DU-17CDB, DU-17CDM, DU-17CHN1, DU-17COL, DU-17COM, (Ch. 356-3, -4)

Ch. 356-3, 356-4

Crosley Models DU-17CDB, DU-17CDM, DU-17CHN1, DU-17COL and DU-17COM (Ch. 356-3 and 356-4) are electrically identical to the Models using Ch. 356-1, -2 covered in Photofact Folder 6 in Set #168 except for the following:

R37 was changed from 10KΩ to 8.2KΩ.

The on/off switch (R6D) was changed to a DPDT switch (Part #153348). The added pole was connected in series with the line from the 330 volt source to pin 10 of the CRT. When the set is turned off the B supply to the accelerating anode of the picture tube is opened. A .01MFD capacitor was also added from pin 10 of the picture tube and ground.

(Continued on Reverse Side)

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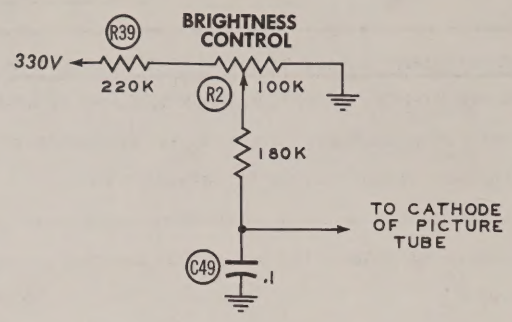
DEWALD MODELS DT-162R, DT-163A, R, DT-19D, ET-190R, ET-14R, ET-170, ET-171, ET-172, ET-190D, FT-200, FT-201



CROSLEY MODELS DU-17CDE, DU-17CDM, DU-17CHM, DU-17COL, DU-17COM (Ch. 356-3, -4)

Chassis 356-3 uses a 17HP4 or 17HP4A electrostatic focus picture tube and Ch. 356-4 uses a 17TP4 electrostatic focus picture tube.

When these tubes are used, a voltage of approximately 0-500 volts is obtained by adding a 1.5 megohm control between the junction of R82 and R84 and ground. The center terminal of this control is then connected to Pin 6 of the picture tube.

When the electrostatic focus tubes are used, the focus coil (T6), is replaced by a 345Ω, 10W. resistor. The focus control (R4) and R107 are omitted. R71 was changed to 470Ω.

A centering magnet (Part #153255) was added on the neck of the picture tube.

PHOTOFACT* Folder

*TRADE MARK

AIRLINE
MODEL 25WG-3056A

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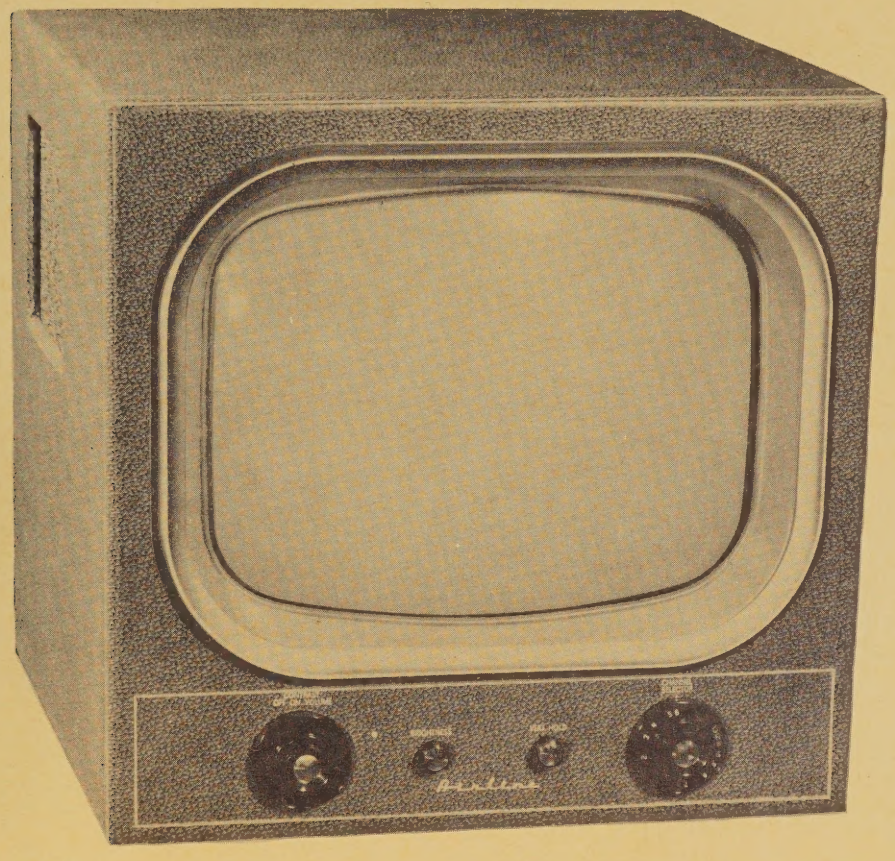

MODEL 25WG-3056

AIRLINE
MODEL 25WG-3056A

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DATE 1-53 SET 192 FOLDER 2

PHOTOFACT* Folder

*TRADE MARK

AIRLINE
MODEL 25WG-3056A

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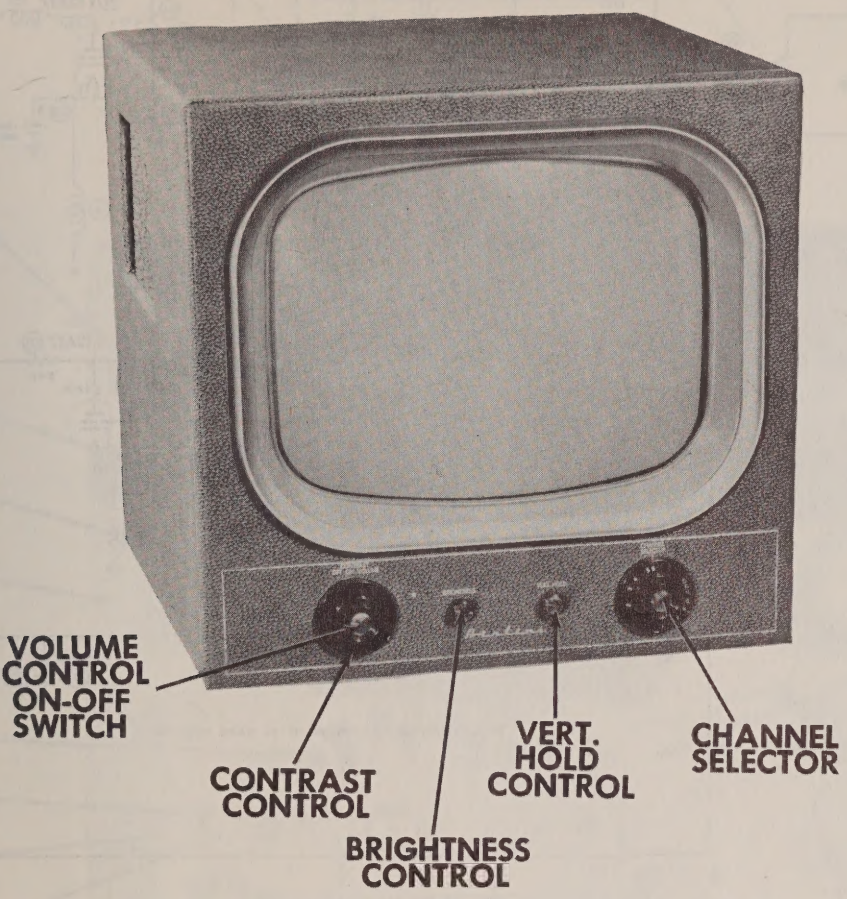

AIRLINE
MODEL 25WG-3056A

TRADE NAME	Airline Model 25WG-3056A
SUPPLIER	Montgomery Ward & Co., 619 Chicago Ave., Chicago, Ill.
TYPE SET	Television Receiver
TUBES	Twenty

POWER SUPPLY 110-120 Volts AC-60 Cycle RATING 1.54 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST Channels 2 thru 13 (continuous tuning), Video IF 26.2MC, Sound IF 21.7MC (Intercarrier)

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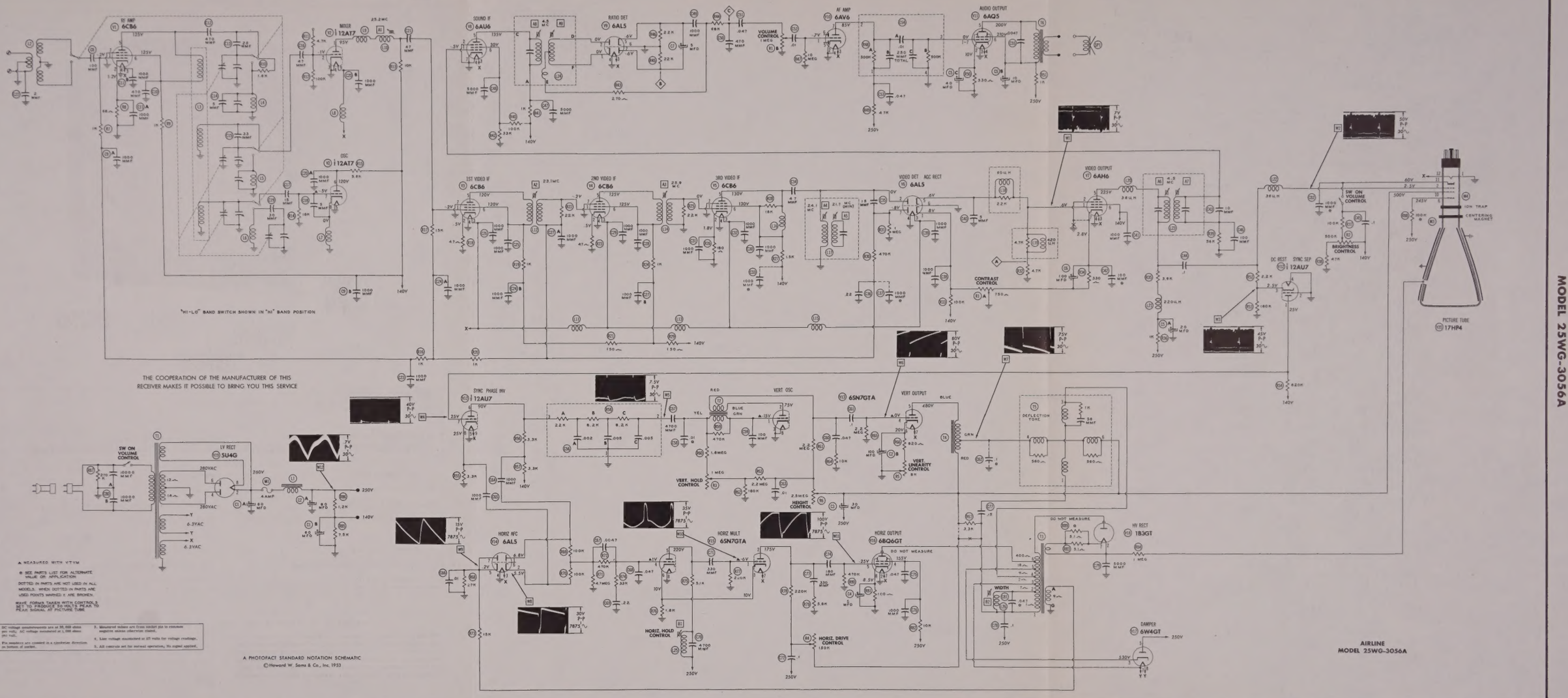
DATE 1-53 SET 192 FOLDER 2


RF AMP 6CB6
MIXER 12AT7
OSC 12AT7
SOUND IF 6AU6
RATIO DET 6AL5
AF AMP 6AV6
AUDIO OUTPUT 6AQ5
VOLUME CONTROL 1 MEG
1ST VIDEO IF 6CB6
2ND VIDEO IF 6CB6
3RD VIDEO IF 6CB6
VIDEO DET. AGC RECT 6AL5
VIDEO OUTPUT 6AH6
CONTRAST CONTROL
SW ON VOLUME CONTROL
BRIGHTNESS CONTROL
DC REST. SYNC SEP. 12AU7
PICTURE TUBE 17HP4
ION TRAP
CENTERING MAGNET
"HI-LO" BAND SWITCH SHOWN IN "HI" BAND POSITION
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
SYNC PHASE INV 12AU7
VERT. OSC
VERT OUTPUT 6SN7GTA
VERT. HOLD CONTROL
VERT. LINEARITY CONTROL
HEIGHT CONTROL
DEFLECTION YOKE
SW ON VOLUME CONTROL
LV RECT 5U4G
HORIZ AFC 6AL5
HORIZ MULT 6SN7GTA
HORIZ OUTPUT 6BQ6GT
HORIZ. HOLD CONTROL
HORIZ. DRIVE CONTROL
DO NOT MEASURE
HV RECT 1B3GT
WIDTH
DAMPER 6W4GT
A MEASURED WITH VTVM
B SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN.
WAVE FORMS TAKEN WITH CONTROLS SET TO PRODUCE 30 VOLTS PEAK TO PEAK SIGNAL AT PICTURE TUBE.
1. DC voltage measurements are at 20,000 ohms per volt, AC voltage measured at 1,000 ohms per volt.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. All controls set for normal operation, No signal applied.
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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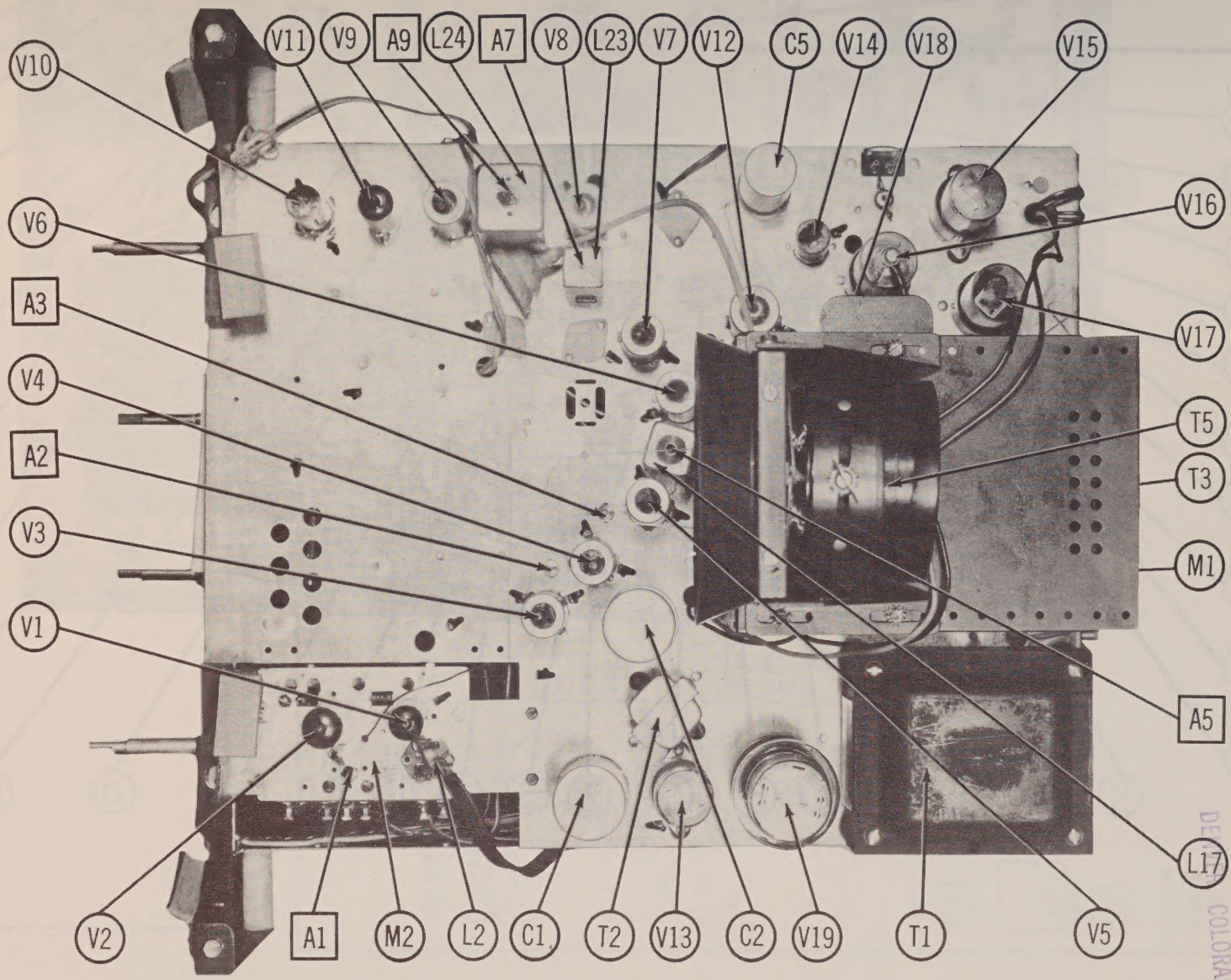
AIRLINE MODEL 25WG-3056A

AIRLINE MODEL 25WG-3056A



CHASSIS TOP VIEW

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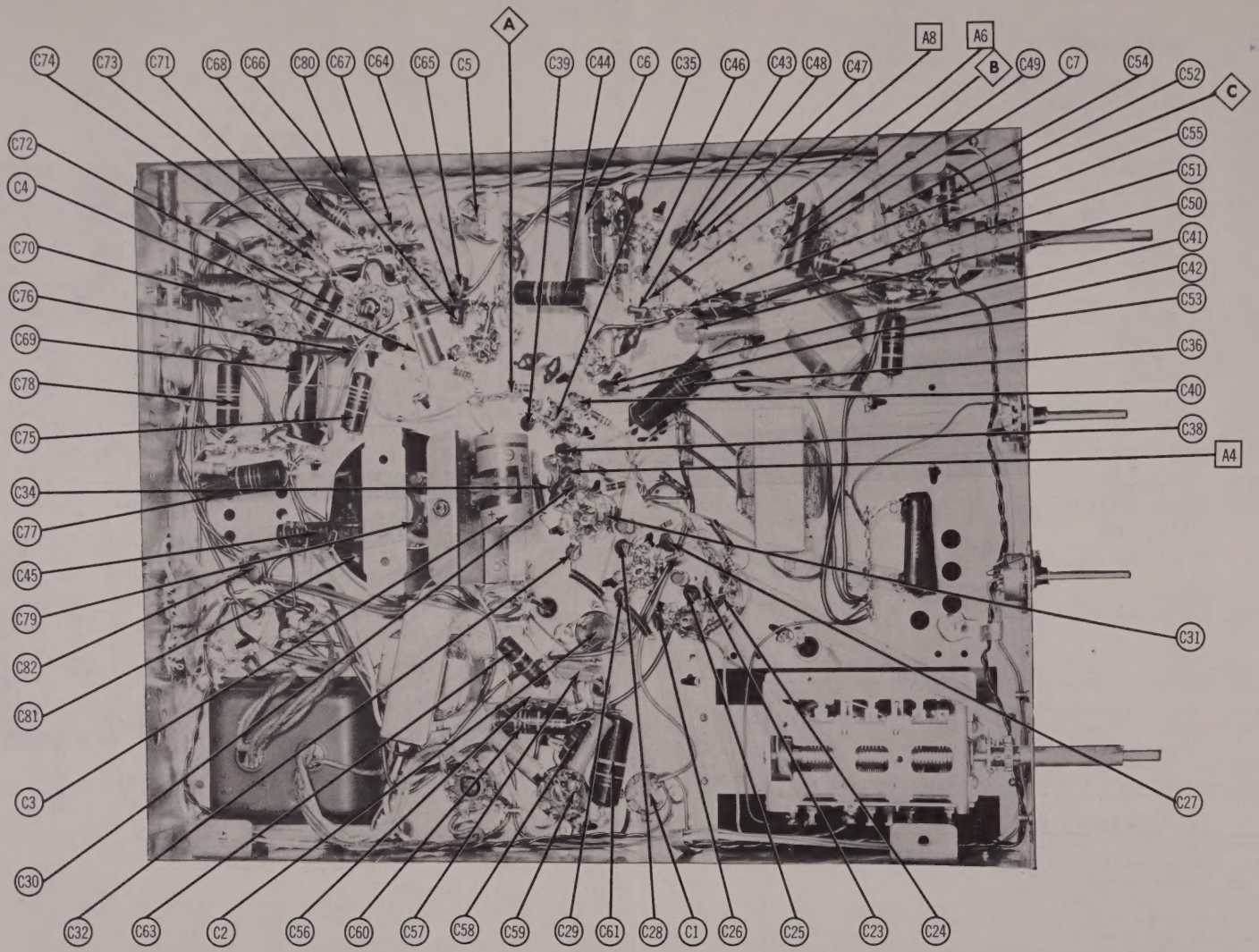
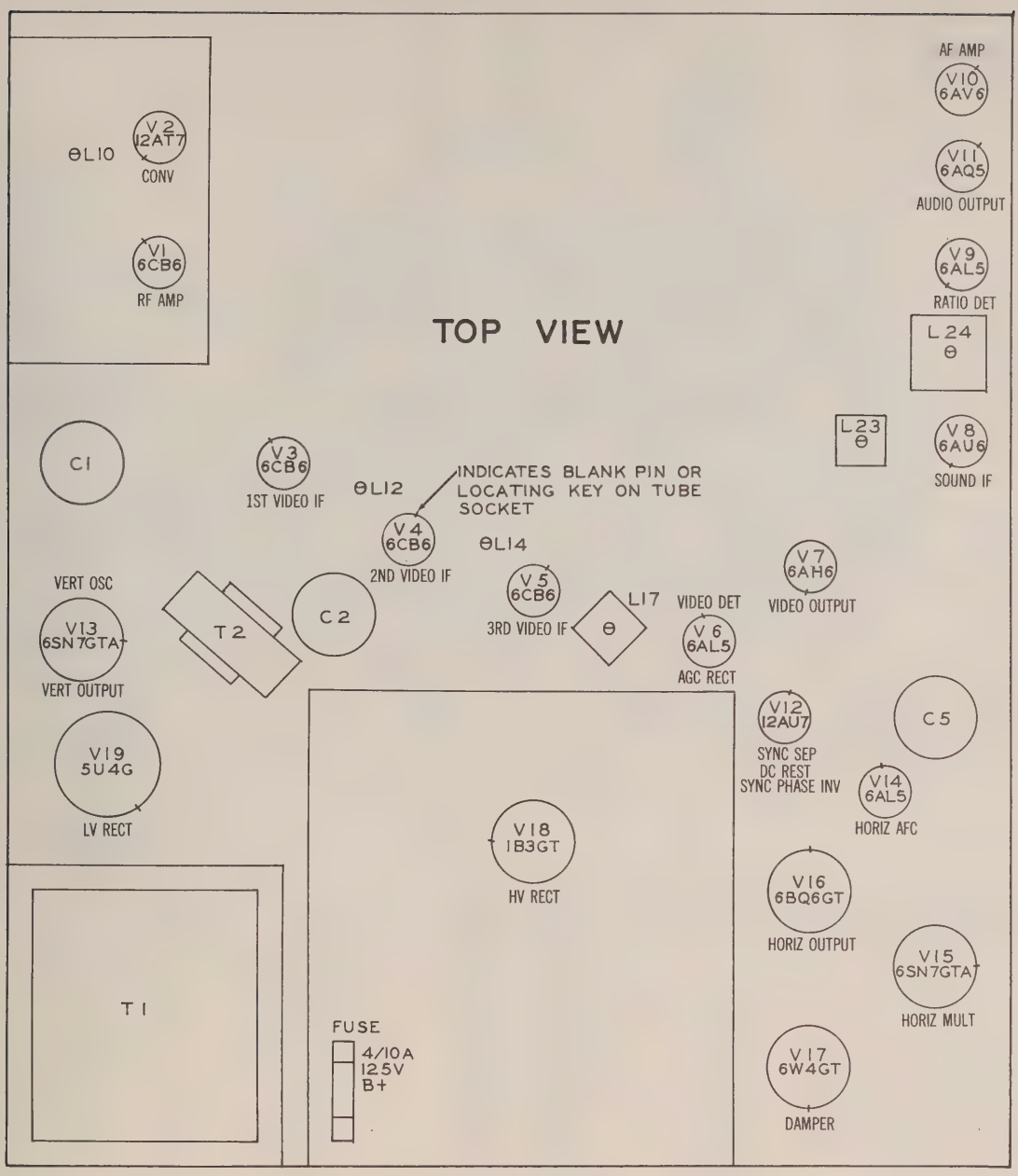


CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - V19, Fuse (M1)

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V2, V3, V4, V5, V6, V7
No pic, no sound, has snow - V1, V2, V3
No pic, has sound, has raster - V7, V12, V20
Has pic, no sound - V8, V9, V10, V11
Overloaded picture - V6

SYNC FAILURE
No vert. sync - V12, V13
No horiz. sync - V12, V14, V15
No vert. or horiz. sync - V12

SWEEP FAILURE
No raster, has sound - V15, V16, V17, V18, V20
No vertical deflection - V13
Poor vert. linearity or foldover - V13
Poor horiz. linearity or foldover - V15, V16, V17
Narrow picture - V15, V16, V17, V18, V19
Vert. off freq. - V12, V13
Horiz. off freq. - V12, V14, V15

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard can be eliminated by removing the horizontal multivibrator tube (V15).

VIDEO IF ALIGNMENT

Connect the negative lead of a 4.5 Volt battery to the ungrounded side of C36. Connect the positive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating overt dummy converter tube. (V2). Low side to chassis.	25.2MC (Unmod)	Tune to non interfering channel.	DC probe thru filter network (Fig. 1) to point Ⓐ. Common to chassis.	A1	Adjust for maximum deflection.
2.	"	"	23.1MC	"	"	A2	"
3.	"	"	25.9MC	"	"	A3	"
4.	"	"	24.1MC	"	"	A4	"
5.	"	"	21.7MC	"	"	A5	Adjust for MINIMUM deflection.

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Direct	High side to an ungrounded tube shield floating over converter tube (V2). Low side to chassis.	24MC (10MC Swp)	21.7MC 23.0MC 23.5MC 25.25MC 26.2MC	Tune to non-interfering channel	Vert. Amp. thru filter network(Fig. 1) to point Ⓐ. Low side to chassis.		Check for response curve similar to Fig. 2. If necessary retouch A1 through A4 for desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
7.	.001MFD	High side to pin 1 (grid) of 6AH6 (V7). Low side to chassis.	4.5MC (Unmod)	Tune to non-interfering channel.	DC probe to point Ⓑ. Common to chassis.	A6, A7, A8	Adjust for maximum deflection.
8.	"	"	"	"	DC probe to point Ⓒ. Common to chassis.	A9	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	.001MFD	High side to pin 1 (grid) of 6AH6 (V7). Low side to chassis.	4.5MC (450KC Swp	4.5MC	Tune to non-interfering channel	Vert. amp to point Ⓑ. Low side to chassis.	A6, A7, A8	Disconnect stabilizer capacitor C7, Adjust for curve of maximum amplitude and symmetry as in Fig. 3.
8.	"	"	"	"	"	Vert. amp to point Ⓒ. Low side to chassis.	A9	Reconnect capacitor C7, Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 4. SLIGHTLY retouch A8 for maximum amplitude and straightness of crossover lines.

TUNER ALIGNMENT

The tuner portion of this receiver has properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

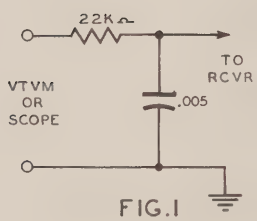


FIG.1

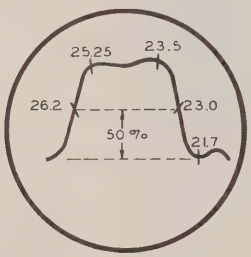


FIG.2

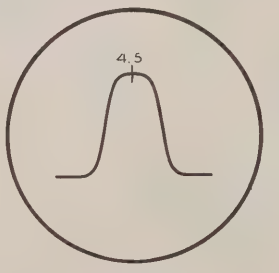


FIG. 3

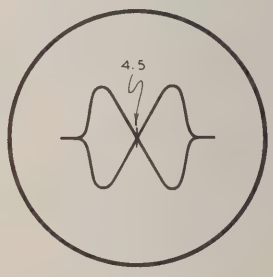


FIG. 4

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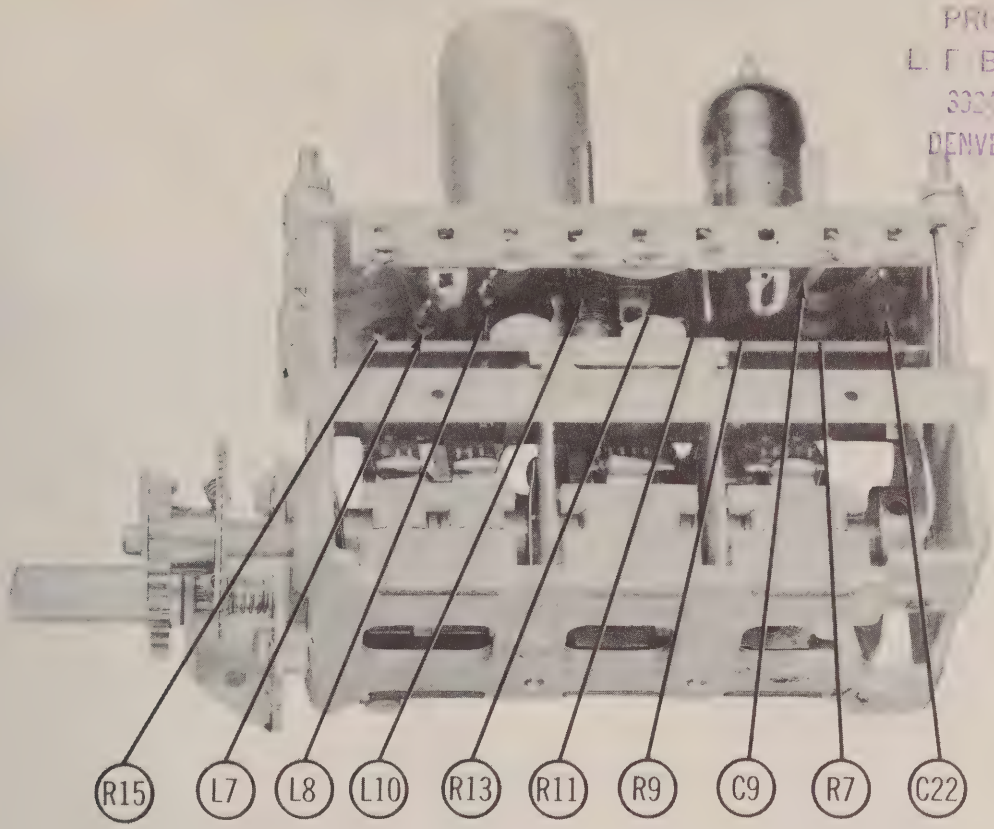
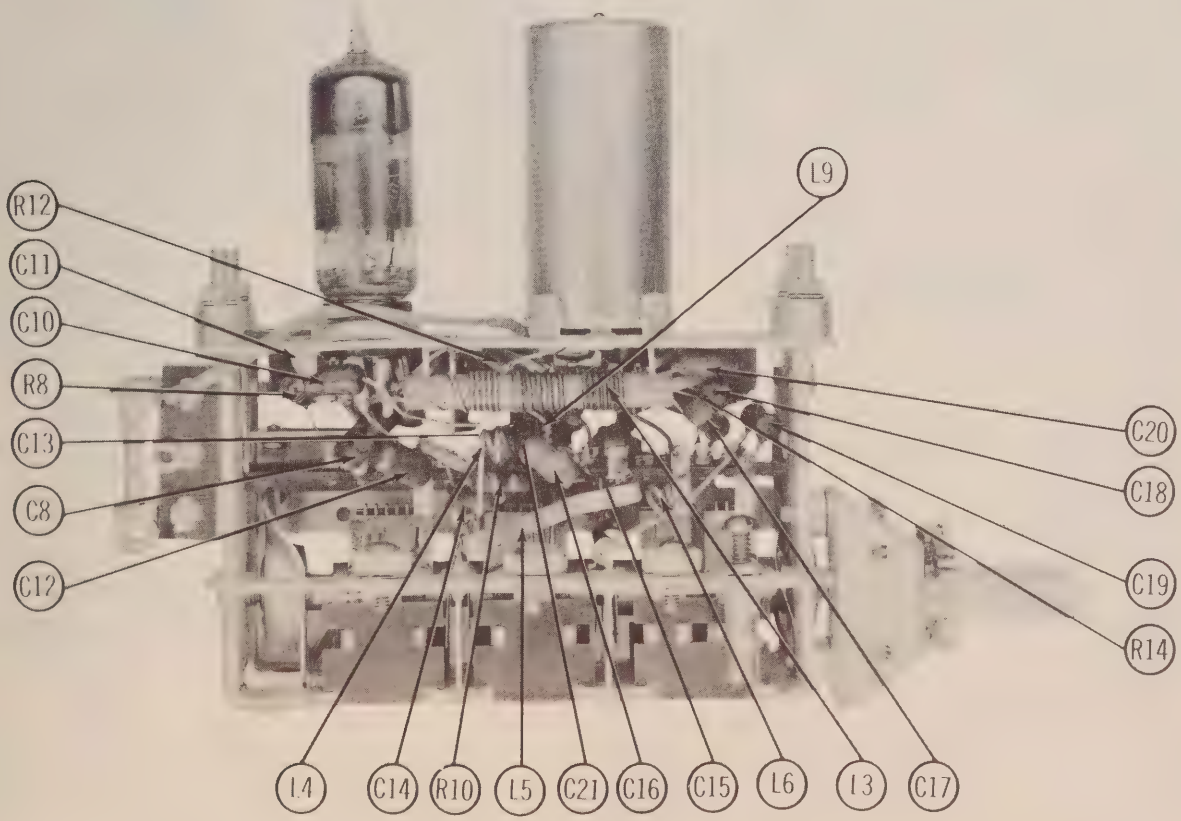


RF TUNER-RIGHT SIDE

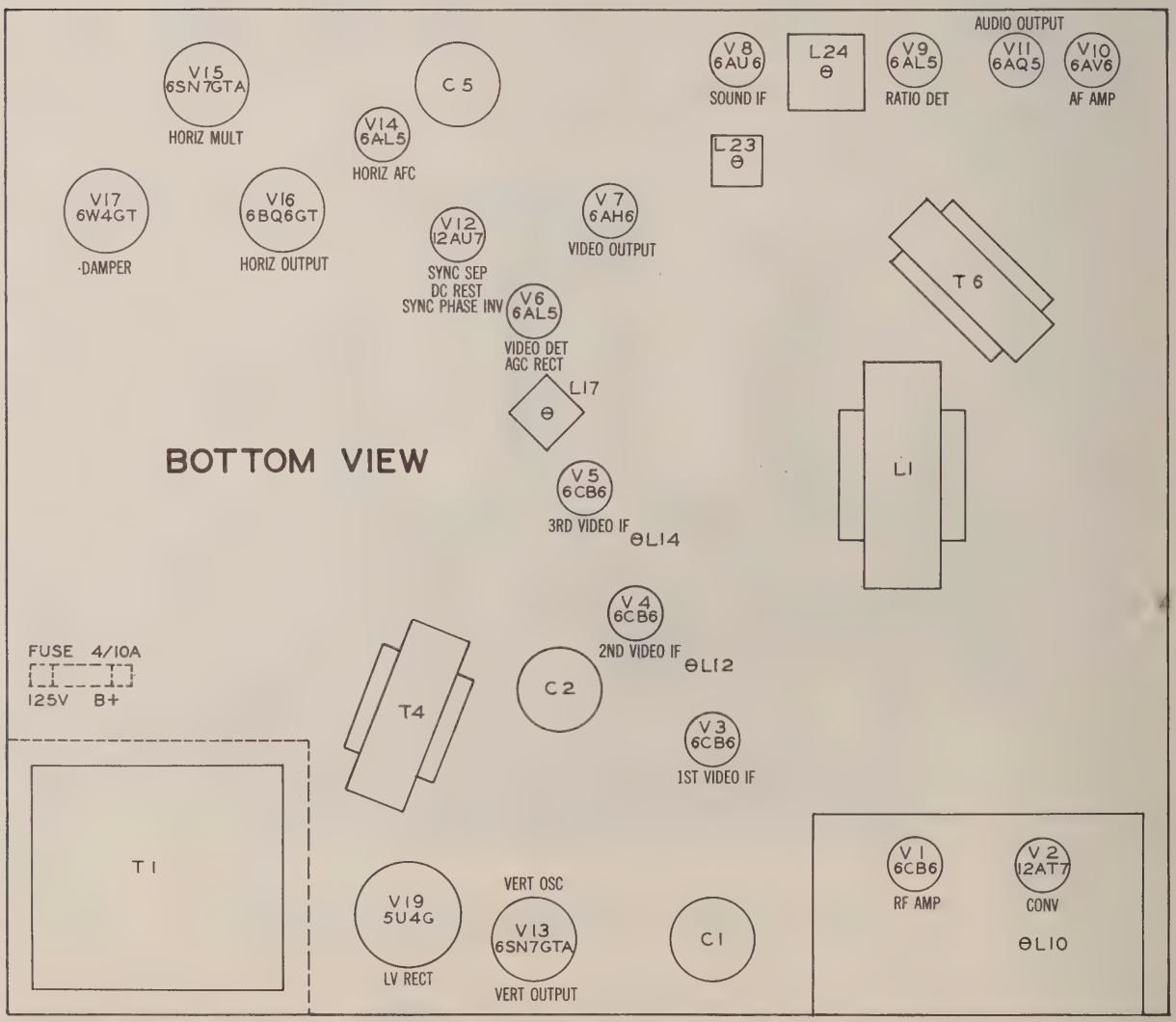


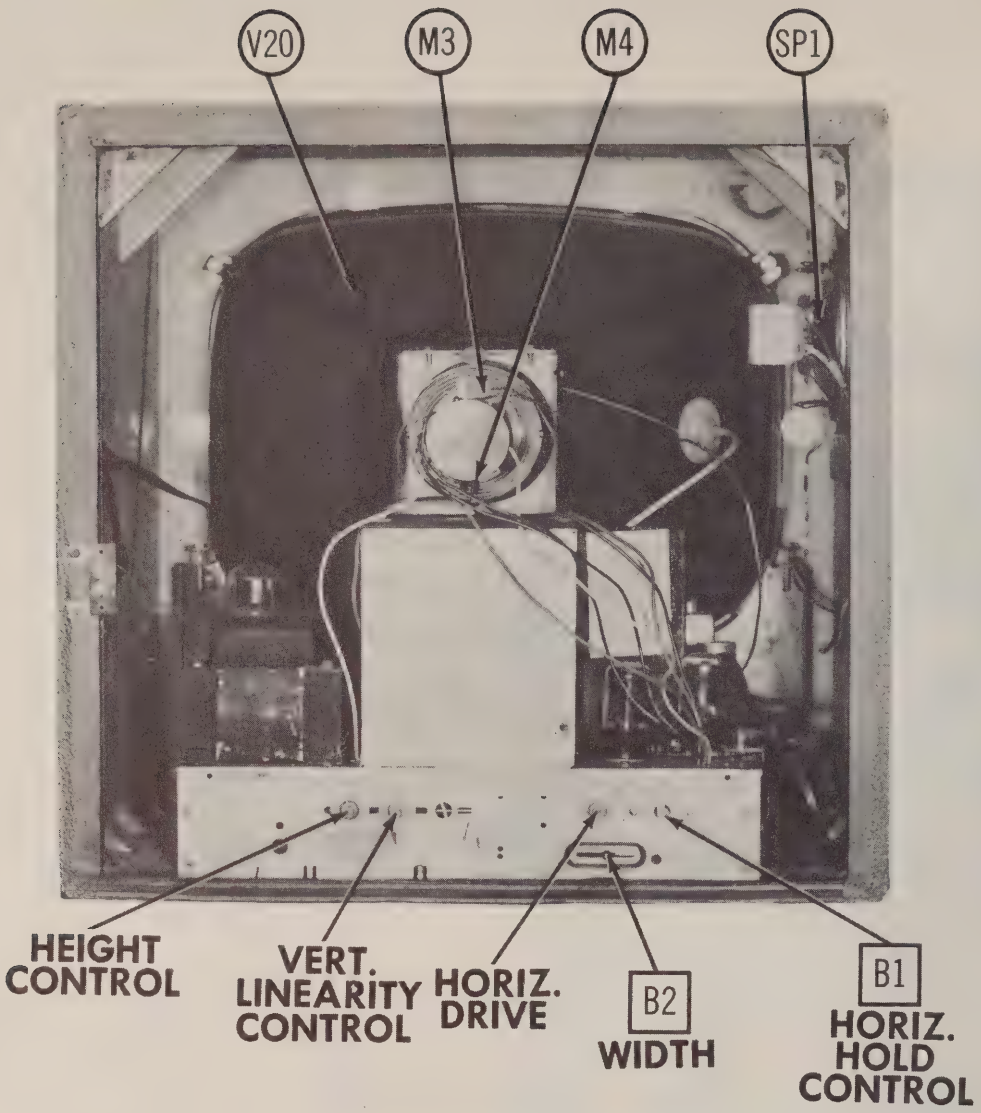
RF TUNER-LEFT SIDE

RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	1.4Meg	68Ω	.1Ω	0Ω	†2KΩ	† 2KΩ	0Ω		
V 2	12AT7	† 11KΩ	100KΩ	0Ω	0Ω	0Ω	† 6.6KΩ	18KΩ	.2Ω	.1Ω
V 3	6CB6	1.4Meg	47Ω	.1Ω	0Ω	† 2.3KΩ	† 2.3KΩ	0Ω		
V 4	6CB6	1.5Meg	47Ω	.1Ω	0Ω	† 2.2KΩ	†2.2KΩ	0Ω		
V 5	6CB6	.2Ω	180Ω	.1Ω	0Ω	† 2.5KΩ	† 2.5KΩ	0Ω		
V 6	6AL5	500Ω	.2Ω	.1Ω	0Ω	4.7KΩ	0Ω	1Meg		
V 7	6AH6	4.7KΩ	0Ω	.1Ω	0Ω	† 4.9KΩ	† 1KΩ	580Ω		
V 8	6AU6	58KΩ	0Ω	.1Ω	0Ω	† 2KΩ	25KΩ	0Ω		
V 9	6AL5	INF	INF	.1Ω	0Ω	22KΩ	0Ω	22KΩ		
V 10	6AV6	10Meg	0Ω	.1Ω	0Ω	INF	INF	† 550KΩ		
V 11	6AQ5	500KΩ	330Ω	0Ω	.1Ω	† 1.5KΩ	† 1KΩ	500KΩ		
V 12	12AU7	† 820KΩ	0Ω	180KΩ	0Ω	0Ω	† 7.6KΩ	† 820KΩ	3.3KΩ	.1Ω
V 13	6SN7GTA	2Meg	#2.6Meg	0Ω	2.2Meg	#4.8KΩ	2.1KΩ	.1Ω	0Ω	
V 14	6AL5	4.8Meg	4.8Meg	.1Ω	0Ω	10KΩ	INF	10KΩ		
V 15	6SN7GTA	220KΩ	#280KΩ	1.8KΩ	5.1Meg	† 5.2KΩ	1.8KΩ	.1Ω	0Ω	
V 16	6BQ6GT	INF	0Ω	INF	† 10KΩ	470KΩ	#70KΩ	.1Ω	100Ω	TOP CAP # 16Ω
V 17	6W4GT	† 100K	† 48Ω	650KΩ	5.2Meg	† 48Ω	INF	#14Ω	#14Ω	
V 18	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								TOP CAP #416Ω
V 19	5U4G	INF	7KΩ	INF	14Ω	1.3KΩ	13Ω	INF	7KΩ	
V 20	17HP4	0Ω	180KΩ	PIN 6 † 100KΩ	PIN 10 #3.3KΩ	PIN 11 240KΩ	PIN 12 .1Ω			

ALL CONTROLS SET FOR NORMAL OPERATION, NO SIGNAL APPLIED.
† MEASURED FROM PIN 2 OF V19.
# MEASURED FROM PIN 3 OF V17.





CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Adjust the horizontal hold slug (B1) until the picture synchronizes horizontally.

Reduce the contrast to minimum and increase the brightness until picture appears washed out.

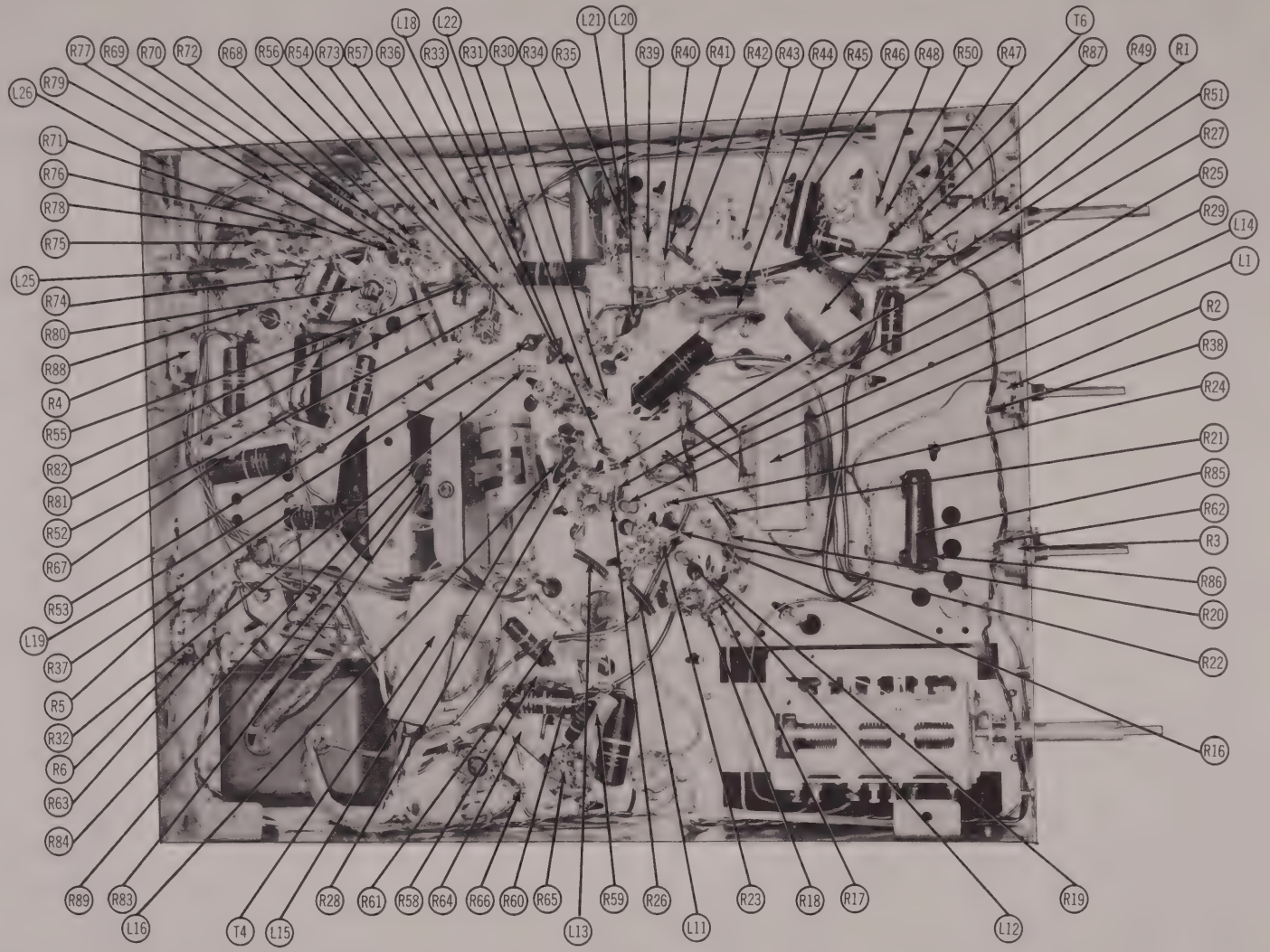
Turn the horizontal drive control clockwise until vertical white lines appear in the picture, then turn counter-clockwise just enough to remove the lines.

Adjust the width slug (B2) for a picture slightly wider than necessary to fill the picture mask horizontally.

DISASSEMBLY INSTRUCTIONS

1. Remove 6 push on type control knobs from front panel.
2. Remove 2 wood & 2 metal screws. Remove rear cover.
3. Disconnect built-in antenna and speaker.
4. Remove 2 wood screws. Remove built-in antenna.
5. Remove 4 speaker nuts. Remove speaker.
6. Remove 5 chassis bolts. Remove chassis.

NOTE: FOR PICTURE TUBE REMOVAL IT IS NECESSARY TO REMOVE CHASSIS AS OUTLINED ABOVE.



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIRLINE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	6CB6	6CB6	7CM	
V2	Converter	12AT7	12AT7	9A	
V3	1st Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd Video IF Amp.	6CB6	6CB6	7CM	
V5	3rd Video IF Amp.	6CB6	6CB6	7CM	
V6	Video Detector - AGC Rectifier	6AL5	6AL5	6BT	
V7	Video Output	6AH6	6AH6	7BK	
V8	Sound IF Amp	6AU6	6AU6	7BK	
V9	Ratio Detector	6AL5	6AL5	6BT	
V10	AF Amplifier	6AV6	6AV6	7BT	
V11	Audio Output	6AQ5	6AQ5	7BZ	
V12	Sync. Seperator-DC Restorer				
	Sync. Phase Inv.	12AU7	12AU7	9A	
V13	Vert. Oscillator Vert. Output	6SN7GTA	6SN7GTA	8BD	
V14	Horiz. AFC	6AL5	6AL5	6BT	
V15	Horiz. Mult.	6SN7GTA	6SN7GTA	8BD	
V16	Horiz. Output	6BL6GT	6BQ6GT	6AM	
V17	Damper	6W4GT	6W4GT	4CG	
V18	HV Rectifier	1B3GT	1B3GT	3C	
V19	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: AIRLINE PART No.	REPLACEMENT DATA: SYLVANIA PART No.	RTMA BASE TYPE	NOTES
V20	17HP4	17HP4 ↓ 17HP4 ↓	12C-12D	① Circuit changes necessary.

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	AIRLINE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	.#80	300	45X397	AFH3-46		C037		FP386	TVL-2584	
B	.#80	300								
C2A	.#80	300	45X395	AFH3-42		C107		FP375	TVL-3722	
B	.#00	50								
C3	30	400	45X393	PR8450/30		BR3045A		TC77	TVA-1711	
C4	5	25	45X378	PR8150/4		BR550		TC30	TVA-1203	
C5A	.#20	300	45X399	AFH3-137		C097		FP366	TVL-3662	
B	.#0	300								
C	40	50								
C6	100	25	45X401	PR825/100		BR8251A		TC2501	TVA-1207	
C7	5	25	45X378	PR8150/4		BR550		TC30	TVA-1203	
C8	100		RC-490009	SD00	D8-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C9A	1000		RC-490016	BPD-2X001	DD-3-102	TM5DD1	B12-001	DCD-521	5HK-2D1	
B	1000									
C10	470		RC-490007	5Y470	D8-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C11A	1000		RC-490016	BPD-2X001	DD-3-102	TM5DD1	B12-001	DCD-521	5HK-2D1	
B	1000									
C12	470		RC-490007	5Y470	D8-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C13	25		RC-490008	3I25	D8-250		GP1K-250	UC-5426	5GA-Q25	
C14	5		RC-490010	S1SN750	TCN-5		N750K-050	NT-555	5TCUB-V5	
C15	33		RC-490017	S1SN750	TCN-33		N750K-330	NT-5433	5TCU-Q33	
C16	47		RC-490004	S1H7NT50	TCN-47		N750K-470	NT-5447	5TCU-Q47	
C17	15		RC-490001	S1SN750	TCN-15		N750K-150	NT-5415	5TCU-Q15	
C18	5		RC-490010	S1SN750	TCN-5		N750K-050	NT-555	5TCUB-V5	
C19	30		RC-490053	S1SN750	TCN-30		N750K-300		5TCU-Q3	
C20A	1000		RC-490018	BPD-2X001	DD-3-102	TM5DD1	B12-001	DCD-521	5HK-2D1	
B	1000									
C21	47		RC-490004	S1H7NT50	TCN-47		N750K-470 NP0K-020	NT-5447	5TCU-Q47	
C22	2		RC-490032							
C23	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C24A	1000		80X3	BPD-2X001	DD-3-102	TM5DD1	B12-001	DCD-521	5HK-2D1	
B	1000									
C25	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C26	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C27A	1000		80X3	BPD-2X001	DD-3-102	TM5DD1	B12-001	DCD-521	5HK-2D1	
B	1000									
C28	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C29	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C30	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C31	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C32	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C33	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	Note 1.
C34	47		47X565	5I47	D8-470	TM5Q5	GP1K-470	UC-5447	5GA-Q47	
C35	15		47X605	5I15	D8-150	5W5Q15	GP1K-150	UC-5415	5GA-Q15	
C36	.22	200	RCP10M2224M	P488-22		PTE4P22			2TM-P22	
C37	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	Note 1
C38	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C39	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C40	5		47X563	S1SNP0	TCZ-4.7		N750K-050	ZT-565	5TCCB-V47	
C41	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C42	100		47X604	SI00	D8-101	TM5T1	GP1K-101	UC-531	5GA-T1	Note 1
C43	47		47X323	TCZ-10	TCZ-10		N90K-100	TC-541	5TCC-Q47	
C44	.1	400	RCP10M4104M	P488-1		DF-104	PTE4P1		4TM-P1	
C45	.1	200	RCP10M2104M	P288-1		DF-104	P2Z1		2TM-P1	
C46	100		47X604	SI00	D8-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C47	5000		47X507	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C48	5000		47X507	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C49	5000		80X5	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C50	470	500	47X525	1468-0005	D8-471	5W5T5	GP2K-471	MC245	1FM-35	
C51	.047	200	RCP10M4743M	P288-047	DF-503	PTE4P47		PT4147	2TM-S47	
C52	.01	400	RCP10M4103M	P488-01	D8-103	PTE4S1	GP2-333-103	PT4141	4TM-S1	
C53	.047	400	RCP10M4473M	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C54A	.01									
B C	250		†76X5		†PC-80		†1404-01		†102C1	
C55	.0047	600	RCP10M5472M	P988-0047	D8-472	PTE5D47	GP2-333-472	PT5247	6TM-D47	

PARTS LIST AND DESCRIPTIONS

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	AIRLINE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C56A	.002			P888-002		PTE8D2	#1405-01	PT822	#101C1	
B	.005		†76X7	P888-005	#PC-100	PTE8D5		PT825		
C	.005			P888-005		PTE8D5		PT825		
C57	4700	500	47X543	1484-005		IDRSD5		MCB465	MS-25	
C58	.01	400	RCP10M4103M	P488-01	D8-103	PTE4S1	GP2-333-103	PT411	4TM-S1	Note 2
C59	100		47X604	SI00	D8-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C60	.047	600	RCP10M8473M	P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C61	.1	600	RCP10M6104M	P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C62	.1	600	RCP10M6104M	P688-1	DF-104	PTE6P1		PT601	6TM-P1	Note 1
C63	.01	600	RCP10M6103M	P688-01	D8-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C64	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C65	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C66	.01	400	RCP10M4103M	P488-01	D8-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C67	.0047	400	RCP10M4472M	P688-0047	D8-472	PTE8D47	GP2-333-472	PT8247	6TM-D47	
C68	.047	200	RCP10M2473M	P288-047	DF-503	PJS247		PT4147	2TM-S47	
C69	.22	200	RCP10M2224M	P288-23		PTE4P23		PT4025	2TM-P22	
C70	4700	500	47X543	1484-005		IDRSD5		MCB465	MS-25	
C71	330	500	47X570	1469-00035						
C72	.1	400	RCP10M4104M	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C73	330	500	47X570	1469-00035						
C74	180	500	47X564	1469-0002		SR5T2		MCB237	MS-32	
C75	.047	400	RCP10M4473M	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C76	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C77	.15	400	RCP10M4154M	P488-15		PTE4P15		TP417	4TM-P15	
C78	.1	400	RCP10M4104M	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C79	500	20000	47X560	HV30C	†V7-502	MM-C20T5	413-501		20DK-T5	
C80A	10000		†6X8	BPD-01	DD-3-103	TM5S1	821-01	DC-5U	5HK-2S1	
B	10000			BPD-01		TM5S1	821-01	DC-5U		
C81	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	Note 1
C82	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	Note 1

Note 1. Not used in all Models
Note 2. Some Models use .0047MFD in this application
† Items C54A, C54B, C54C, R47A, R47B are combined in one unit. When replacing items separately C54B and C54C should total 2500MMF
* Items C56A, C56B, C56C, R57A, R57B, R57C are combined in one unit.

CONTROLS

ITEM No	RATING: RESISTANCE	RATING: WATTS	AIRLINE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	750Ω		78X11					Contrast-Panel Volume & Switch -Rear
B	1 Meg							
†2A	500KΩ		40X385		AG-58-8	AB-58	U-50	Brightness
B	Shaft		Not Req.		RS-3/16"	AK-8	D8-37	Attach to R2A
R3A	1 Meg		40X366		AG-61-8	AB-89	U-54	Vert. Hold
B	Shaft		Not Req.		RS-3/16"	AK-8	D8-37	Attach to R3A
R4A	150KΩ		B40X331-A	QU-228	AG-52-8	AB-46	U-43	Horiz. Drive
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R4A
R5A	8000Ω		40X382	QU-118	AG-27-8	AB-14	SU-20	Vert. Linearity
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R5A
R6A	2.5 Meg		B40X364	QU-239	AG-84-8	AB-83	SU-565	Height
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R6A

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	AIRLINE PART No	IRC PART No.	NOTES
R7	1000Ω		RC-680001	BTS-1000	
R8	68Ω		RC-680000		
R9	1000Ω		RC-680002	BTS-1000	
R10	180Ω		RC-680003		
R11	4700Ω		RC-680004	BTS-4700	
R12	100KΩ		RC-680007	BTS-100K	
R13	10KΩ		RC-6800005	BTS-10K	
R14	18KΩ		RC-680006		
R15	5600Ω		RC-680023	BTS-5600	
R16	1000Ω		B85102	BTS-1000	
R17	15KΩ-5%		B83153		
R18	47Ω-5%		B83470		
R19	1000Ω		B85102	BTS-1000	
R20	1000Ω-5%		B85102	BTS-1000	
R21	150Ω		B85151	BTS-150	
R22	22KΩ		B83223	BTS-22K	
R23	47Ω-5%		B83470		
R24	1000Ω		B85102	BTS-1000	
R25	22KΩ		B83223		
R26	180Ω		B84181	BTS-180	
R27	1500Ω		B84153	BTS-1500	
R28	18KΩ		B84183		
R29	150Ω		B85151	BTS-150	
R30	470KΩ		B85474	BTS-470K	
R31	1 Meg		B84105	BTS-1 Meg	
R32	4700Ω-5%		B83472	BTS-4700-5%	
R33	100KΩ		B84104	BTS-100K	
R34	330Ω		B84331	BTS-330	
R35	3900Ω-5%		C83392	BTA-3900-5%	
R36	1000Ω		C84102	BTA-1000	
R37	100KΩ		B84104	BTS-100K	
R38	47KΩ		B85473	BTS-47K	
R39	56KΩ		B84563	BTS-56K	
R40	100KΩ		B84104	BTS-100K	
R41	1000Ω		B85102	BTS-1000	
R42	33KΩ		B84333	BTS-33K	
R43	270Ω		B84271	BTS-270	
R44	68KΩ		B84683	BTS-68K	
R45	22KΩ		B84223	BTS-22K	
R46	22KΩ		B84223	BTS-22K	
R47	10 Meg		B85106	BTS-10 Meg	
R48A	500KΩ		† 76X5		
B	500KΩ				

† Items R48A, R48B, C54A, C54B, C54C are combined in one unit.
* Items R58A, R58B, R58C, C58A, C58B, C58C are combined in one unit.
Note 1. Some Models use a 1000Ω resistor in this application.
Note 2. Not used in all Models.

ITEM No.	RATING: OHMS	RATING: WATT	AIRLINE PART No.	IRC PART No.	NOTES
R49	47KΩ		B85473	BTS-47K	
R50	330Ω		C84331	BTA-330	
R51	1000Ω		B84102	BTS-1000	
R52	2200Ω		B84222	BTS-2200	
R53	180KΩ		B84184	BTS-180K	
R54	820KΩ		B84834	BTS-820K	
R55	3300Ω-5%		B83352	BTS-3300-5%	
R56	3300Ω		B84332	BTS-3300	
R57	3300Ω-5%		B83332	BTS-3300-5%	
R58A	82KΩ			BTS-22K	
B	8200Ω		◆ 76X7	BTS-8200	
C	8200Ω			BTS-8200	
R59	470KΩ		B85474	BTS-470K	
R60	1.8Meg		B84185	BTS-1.8Meg	
R61	2.2Meg		B84225	BTS-2.2Meg	
R62	180KΩ		B84184	BTS-180K	
R63	2.2Meg		B84225	BTS-2.2Meg	
R64	10KΩ		B84103	BTS-10K	
R65	2.2Meg		B84225	BTS-2.2Meg	
R66	820Ω		B84821	BTS-820	
R67	3300Ω		C84332	BTA-3300	
R68	27KΩ		B84273	BTS-27K	
R69	100KΩ		B84104	BTS-100K	
R70	100KΩ		B84104	BTS-100K	
R71	4.7Meg		B85475	BTS-4.7Meg	
R72	470KΩ		B85474	BTS-470K	
R73	15KΩ		C84153	BTA-15K	
R74	33KΩ		B84333	BTS-33K	
R75	5100Ω-5%		C83512	BTA-5100-5%	
R76	1800Ω-5%		B83182	BTS-1800-5%	
R77	220KΩ		B84224	BTS-220K	
R78	220K Ω		B84224	BTS-220K	
R79	5600Ω		B84562	BTS-5600	
R80	470KΩ		B84474	BTS-470K	
R81	100Ω		D84101	BW-2-100	
R82	10KΩ		43X272	1 3/4A-100	
R83	5.1Ω		43X218		
R84	1 Meg		C85105		
R85	7500Ω		43X274	1 3/4A-7500	
R86	1200Ω		43X271	1 3/4A-1200	
R87	270KΩ		B85274	BTS-270K	
R88	100KΩ		B85104	BTS-100K	Note 1
R89	5.1Ω		43X236		Note 2

TRANSFORMER (POWER)

ITEM No	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC ⑤ 1.54A	580VCT ⑤ .230ADC	5VAC ⑤ 3A	6.3VAC ⑤ .65A SEC. 4 6.3VAC ⑤ 7.3A	53X325		P-8167 ①		

① Drill new mounting holes.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T2	190Ω	1100Ω	54X8	A-3000 ①		TSO-3 ②	A-97X	Vert. Osc. Trans.
T3	440Ω	9Ω	53X326	A-8130 ③		HVO-7 ④	TFB-5 ⑤	D-14 ⑥ Horiz. Output Trans.
	tap @ 10Ω, 15Ω, 24Ω, 40Ω	SEC. 2 0Ω						
T4	tap @ 4.5Ω	150MΩ	51X156	A-8141	A-3039	TSO-12	A-104X	Vert. Output Trans.
T5A	19Ω		9A2281	DY-9A	MDF-70	TY-3	Y-17	Horiz. Deflection Coils
B	5Ω							Vert. Deflection Coils

① Drill one new mounting hole.
② Mount on top of chassis.
③ Use with width coil WC-5
④ Use with width coil MWC-1
⑤ Use width coil (with AGC winding) with approx. range of 4-29 Millihenries
⑥ Use with width coil WC-11

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI	RATING: DC RES. SEC.	AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T6	5.5KΩ	3.4Ω	465Ω	.9Ω	51X150A	A-3677	A-2930	KO-302	8-5X ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS: SIZE	RATINGS: FIELD	RATINGS: V. C. IMP.	AIRLINE PART No.	JENSEN PART No	QUAM PART No	NOTES
SP1	5"	PM	3.4Ω	B12A511	ST-105 Mod. P5-X	5A07	

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D.C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000 Cy.)	AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
LJ	.220A	48.5Ω	1.63 Hy.	52X90	C-2328	C-2991	TR-1733 ↓	C-17X ↓

① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	AIRLINE PART No	MERIT PART No.	NOTES
L2	Ant. Trans.	00CT	0Ω	RC-245009		Low Band Secondary - 0Ω
L3	RF Mixer Grid & Osc. Coils	0Ω				Low Band
L4	RF Coil	0Ω				High Band
L5	Mixer Grid Coil	0Ω				High Band
L6	Osc. Coil	0Ω				High Band
L7	Cathode Choke	.2Ω				1, 8 Microhenries
L8	Fil. Choke	2Ω				
L9	RF Choke	0Ω				
L10	1st Video IF	1Ω		RC-245062		
L11	Fil. Choke	0Ω		9A2033		
L12	2nd Video IF	2Ω	2Ω	9A2230		
L13	Fil. Choke	0Ω		9A2033		
L14	3rd Video IF	2Ω	.2Ω	9A2230		
L15	Fil. Choke	0Ω		9A2033		
L16	RF Choke	2.6Ω		9A1979	TV-180	36 Microhenries
L17	4th Video IF	2Ω		9A2226	TV-101	Includes Trap
L18	Series Peaking Coil	7.5Ω		36A10	TV-180●	60 Microhenries; Wound on 22KΩ Resistor
L19	Shunt Peaking Coil	22Ω		36A14	TV-188†	420 Microhenries; Wound on 4.7KΩ Resistor
L20	Series Peaking Coil	2.6Ω		9A1979	TV-180	36 Microhenries
L21	Shunt Peaking Coil	15Ω		36A15	TV-185	220 Microhenries
L22	Series Peaking Coil	2.6Ω		[illegible]	TV-180	36 Microhenries
L23	Sound IF	1.6Ω	1.6Ω	9A2170	TV-113	
L24	Ratio Det.	3.4Ω	.66CT	9A2269	TV-110*	Tertiary Winding - .3Ω
L25	Horiz. Osc.	60Ω		9A2273	TV-183	
L26	Width Coil	.7Ω		9A2183		

● Parallel with 22KΩ resistor.
† Parallel with 4.7KΩ resistor
* Drill one new mounting hole.

PARTS LIST CONTINUED ON PAGE 15

PARTS LIST AND DESCRIPTIONS (Continued)

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			AIRLINE PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG (Slo-Blo	4/10A 125V	16X147-3	16X146	313.400 (3AG-4/10A-Slo-Blo)	357001	MDL-4/10	4405

MISCELLANEOUS

ITEM No.	PART NAME	AIRLINE PART No.	NOTES
M2	RF Tuner		
M3	Centering Magnet	2A419	
M4	Ion Trap	2A421	
	Knob	10A813	Channel Selector
	Knob	10A814	Contrast
	Knob	10A815	Off/On Volume
	Knob	10A816	Fine Tuning
	Knob	10A817	Brightness and Vertical Hold
	Back Cover	S-14X57	
	Mask	4X1186	
	Safety Glass	17X169	

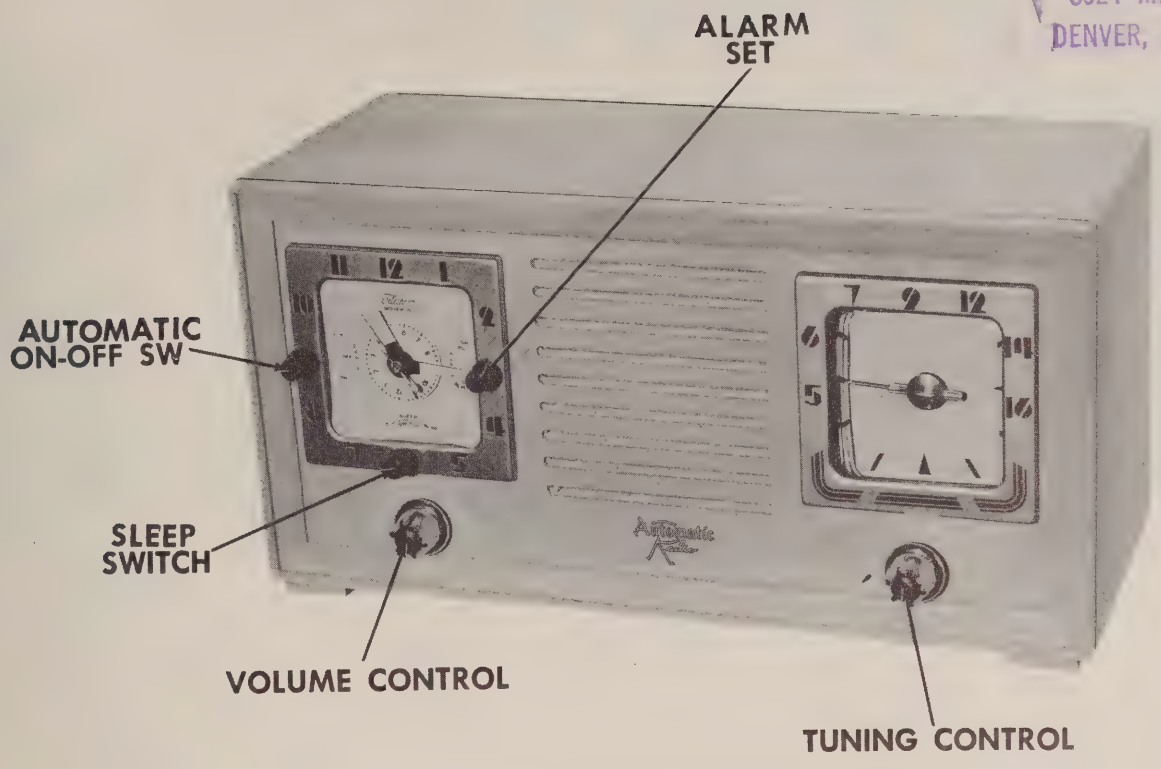
...OF
...MENSHIP
3924 MEADE ST.
DENVER, COLORADO

RTMA RADIO-TELEVISION MANUFACTURERS ASSOCIATION MEMBER

AUTOMATIC
MODELS CL-152B, M, CL-164B

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST
DENVER, COLORADO

AUTOMATIC
MODELS CL-152B, M, CL-164B



AUTOMATIC
MODELS CL-152B, M, CL-164B

AUTOMATIC MODEL CL-152B

TRADE NAME	Automatic Models CL-152B, M, CL-164B
MANUFACTURER	Automatic Radio Mfg. Co., Inc., 122 Brookline Ave., Boston, Mass.
TYPE SET	AC Operated AM Superheterodyne Receiver with Electric Clock
TUBES(Five)	Types 12BE6 Conv., 12BA6 IF Amp., 12AT6 Det-AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier.
POWER SUPPLY	115-125 Volts AC-60 Cycle
RATING	.24 Amp @ 117 Volts AC
TUNING RANGE—BROADCAST	538-1650 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use a insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to stator of rear section of tuning gang. Low side to B-.	455KC (400~Mod)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	"	1650 KC	"	"	A5	"
3.		Loop	1400KC	Tune to 1400KC	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

AUTOMATIC
MODELS CL-152B

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		AUTOMATIC PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	Det.-AVC-AF Amp	12AT6	12AT6	7BT	
V4	Audio Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	AUTOMATIC PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	■50	150	CE-601-U	AFH2-16		B016		FP214	TVL-2435	
B	▲50	150								
C2	100		CC200	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C3	.1	400	C208	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C4	500	500	CC500	1468-0005	D6-501	5W5T5	GP2K-501		1FM-35	
C5	.01	600	C206	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C6	200		CC201	SI200	D6-201	5W5T2	GP2K-201	UC-532	5GA-T2	
C7	.01	600	C206	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C8	.01	600	C206	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C9	.05	400	C204	P488-05		PTE4S5		PT415	4TM-S5	
C10	.1	400	C14L	P488-1		PTE4P1		PT401	4TM-P1	Note 1
C11	12		SI12		D6-120		GP1K-120	UC-5412	5GA-Q12	

Note 1. Original Mfgr's item includes series coil.
When replacing with other than mfgr's part no., rewind coil on replacement.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	AUTOMATIC PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	750KΩ	½	RV-152	Q13-137	AG-79-Z	B-70	U-51	Volume
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	AUTOMATIC PART No.	IRC PART No.	
R2	22KΩ	½	R306		
R3	2 Meg	½	R310		
R4	10 Meg	½	R311	BTS-10 Meg	
R5	220KΩ	½		BTS-220K	
R6	500KΩ	½	R308		

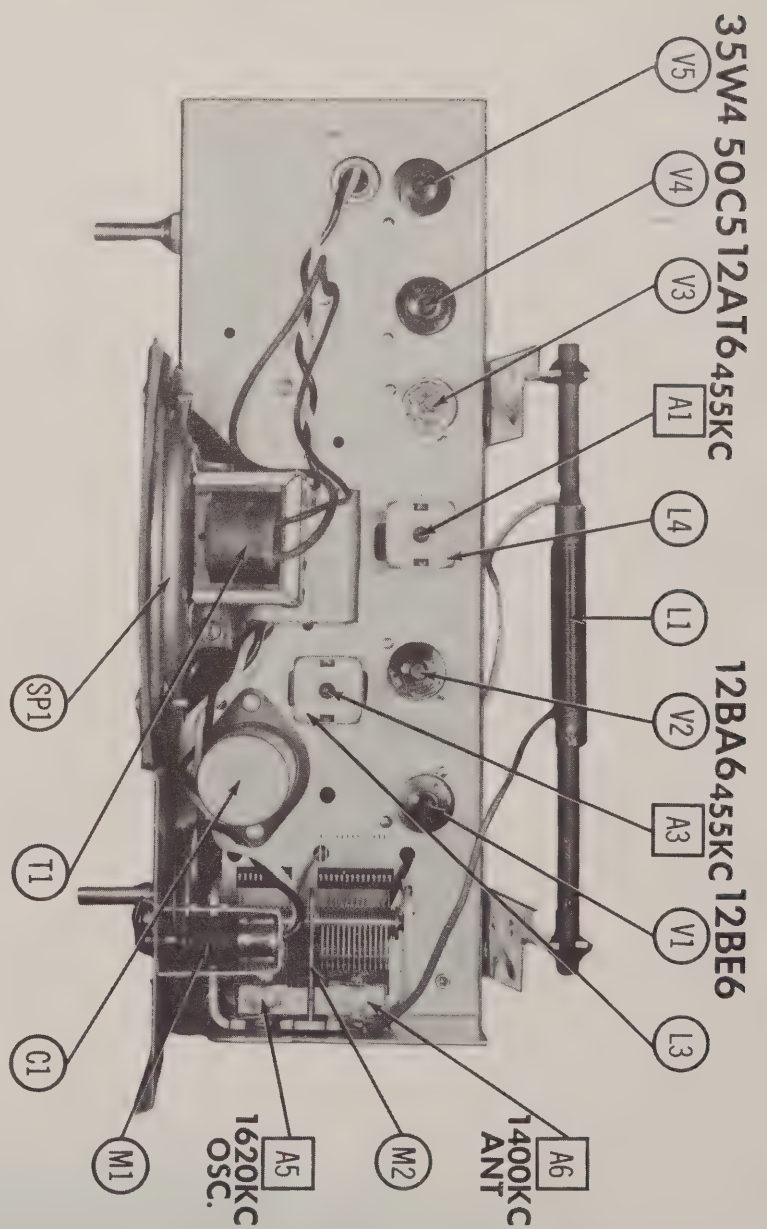
ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	AUTOMATIC PART No.	IRC PART No.	
R7	150Ω	½	R320	BTS-150	
R8	33Ω	½			Note 1
R9	1500Ω	1	R314	BTA-1500	
R10	220KΩ	½		BTS-220K	
R11	150Ω	½	R320	BTS-150	Note 2

Note 1. Some models use a 27Ω resistor in this application.
Note 2. Not used in all models.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		AUTOMATIC PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	3KΩ	3.3Ω	225Ω	.75Ω	Part of Spkr.	A-3332	A-3025	RO-302	S-1X	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	AUTOMATIC PART No.	JENSEN PART No.	QUAM PART No.	
SP1	5"	PM	3.3Ω	PM-300	ST-105 Mod. P5-X	5A07	

COILS (RF-IF)

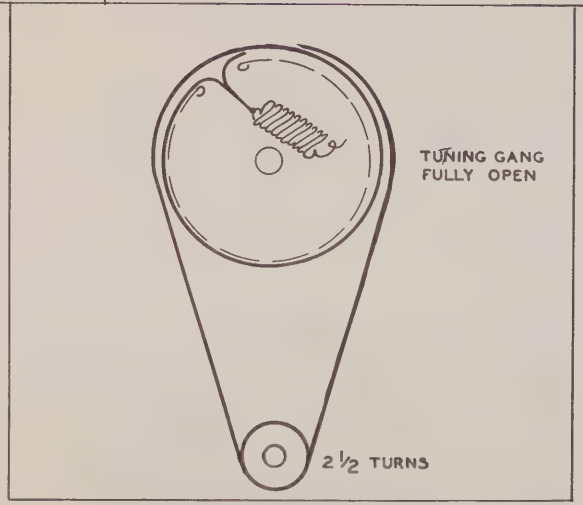
ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	AUTOMATIC PART No.	MERIT PART No.		
L1	Loop Ant.	.2Ω		L-A51			
L2	Osc. Coil	8Ω		L-201			Tapped @ 7.4Ω
L3	Input IF	19Ω	19Ω	1655-16	BC-352		
L4	Output IF	19Ω	19Ω	1655-16	BC-353		

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					AUTOMATIC PART No.		
M1	Bayonet	6-8	.25	Brown	T-47		Type No. 47

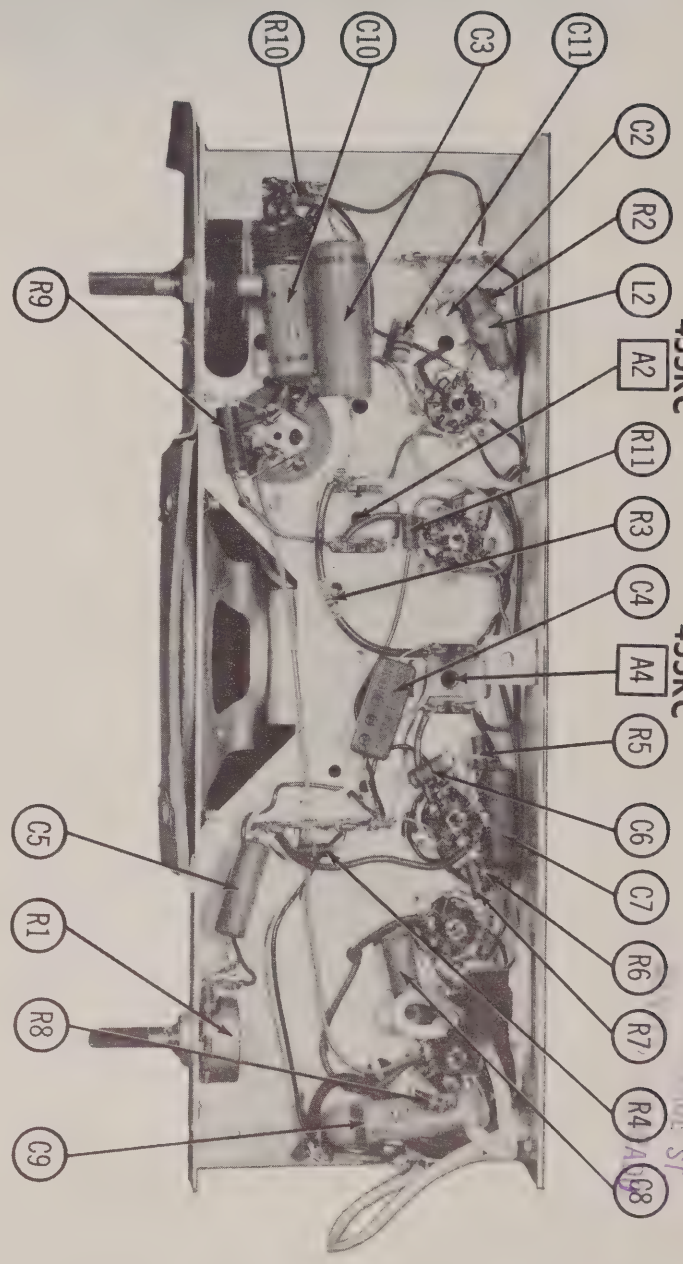
MISCELLANEOUS

ITEM No.	PART NAME	AUTOMATIC PART No.	NOTES
M2	Tuning Capacitor	CV-149	46-475MMF, 36,-200MMF
	Cabinet	H-152B	Blonde, Models CL-152B
	Cabinet	H-152M	Mahogany Model CL-152M
	Cabinet	H-162B	De luxe Blonde, Model CL-164B
	Knob	H-101	2 used
	Clock	C57G27	
	Clock	C57G84	
	Dial Pointer	H-102	
	Dial Pointer	H-152	



DIAL CORD DRIVE

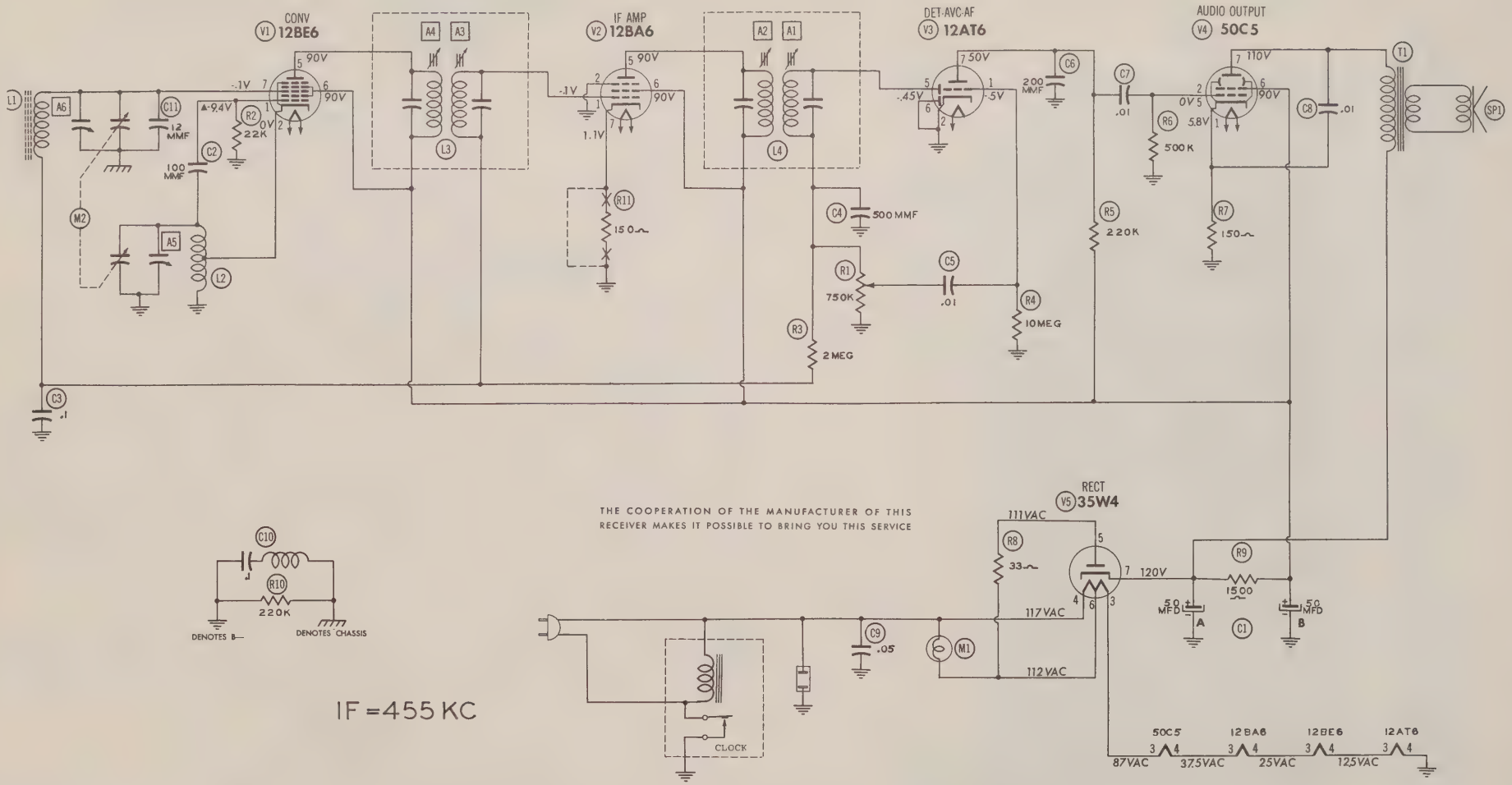
CHASSIS—BOTTOM VIEW



SET 192 FOLDER 3

AUTOMATIC MODELS CL-152B

AUTOMATIC MODELS CL-152B



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

IF = 455 KC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	.6Ω	24Ω	12Ω	†1.5KΩ	†1.5KΩ	2.7 Meg
V 2	12BA6	2.7 Meg	0Ω	36Ω	24Ω	†1.5KΩ	†1.5KΩ	150Ω
V 3	12AT6	10 Meg	0Ω	12Ω	0Ω	750KΩ	0Ω	†220KΩ
V 4	50C5	150Ω	500KΩ	84Ω	36Ω	500KΩ	†1.5KΩ	†225Ω
V 5	35W4	INF	INF	84Ω	120Ω	149Ω	116Ω	250KΩ

▲ TAKEN WITH VACUUM TUBE VOLTMETER
† MEASURED FROM PIN 7 OF V5
NOTE: FILAMENT RESISTANCE TAKEN WITH "OFF-ON" SWITCH IN "OFF" POSITION

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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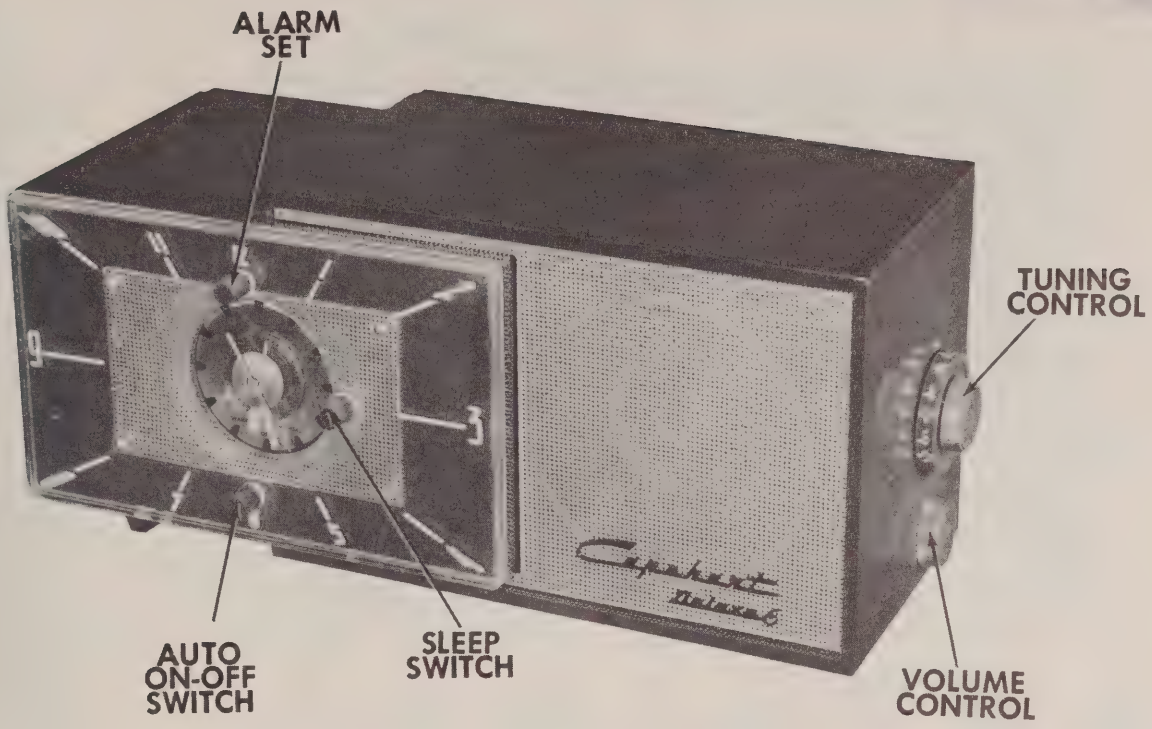
192-3

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

CAPEHART
MODEL TC-62 (Ch. CR-71)



CAPEHART
MODEL TC-62 (Ch. CR-71)

TRADE NAME	Capehart Model TC-62 (Ch. CR-71)
MANUFACTURER	Capehart-Farnsworth Corp., Ft. Wayne, Ind.
TYPE SET	AC Operated AM Superheterodyne Receiver With Electric Clock
TUBES (Six)	Types 12BA6 RF Amp., 12BE6 Conv., 12BA6 IF Amp., 12AV6 Det.-AVC-AF Amp., 35C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	105-125 Volts AC-60 Cycles RATING .23 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	535-1620 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to stator of antenna section of tuning gang. Low side to B-.	455 KC (400~Mod)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Short stator to rotor on oscillator section of gang. Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	"	1620 KC	"	"	A5	Remove short on oscillator section of gang. Adjust for maximum output.
3.	"	"	537 KC	Tuning gang fully closed	"	A6	Adjust for maximum output.
4.	"	"	1500 KC	1500 KC	"	A7	"
5.	"	"	600 KC	600 KC	"	A8	"
6.		Loop	1500 KC	1500 KC	"	A9	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

CAPEHART
MODEL TC-62 (Ch. CR-71)

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		CAPEHART PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	12BA6	12BA6	7BK	
V2	Converter	12BE6	12BE6	7CH	
V3	IF Amplifier	12BA6	12BA6	7BK	
V4	Det.-AVC-AF Amp	12AV6	12AV6	7BT	
V5	Audio Output	35C5	35C5	7CV	
V6	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	CAPEHART PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	50	150	650326A-1	PRS150/50-50		BRD5515A		2N521	TVA-2453	
B	50	150								
C2	25	25	452132A-3	PRS25/25		BR252A		TC26	TVA-1205	
C3	470			SI470	D6-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C4	5000		450469A-1	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C5	56		2241-554							
C6	56		2241-554							
C7	.047	200	2246-4730	P288-047	DF-503	PJ2S5		PT4147	2TM-S47	
C8	150		2240-021	SI150	D6-151	TM5T15	GP2K-151	UC-5315	5GA-T15	
C9A	220									
B	.002									
C	.005				♦PC-150		♦1408-01		♦103C4	
D	250									
E										
C10	.01	600	2248-1030	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C11	.022	600	2248-2230	P688-022		PTE6S22		PT6122	6TM-S22	
C12	.047	600	2248-4730	P688-047	DF-503	PTE6S47		PT6147	6TM-S47	

♦ Items C9A, C9B, C9C, C9D, C9E, R8A, R8B, R8C are combined in one unit. When replacing items separately, C9D and C9E should total 250MMF.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	CAPEHART PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	500KΩ	½	452241A-1	Q13-133	AG-60-Z	B-60	U-48	Volume
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	CAPEHART PART No.	IRC PART No.	
R2	3.3Meg	½	3230-335	BTS-3.3Meg	
R3	150Ω	½	3229-151	BTS-150	
R4	1000Ω	1	3232-102	BTA-1000	
R5	22KΩ	½	3229-223	BTS-22K	
R6	150Ω	½	3229-151	BTS-150	
R7	3.3Meg	½	3230-335	BTS-3.3Meg	

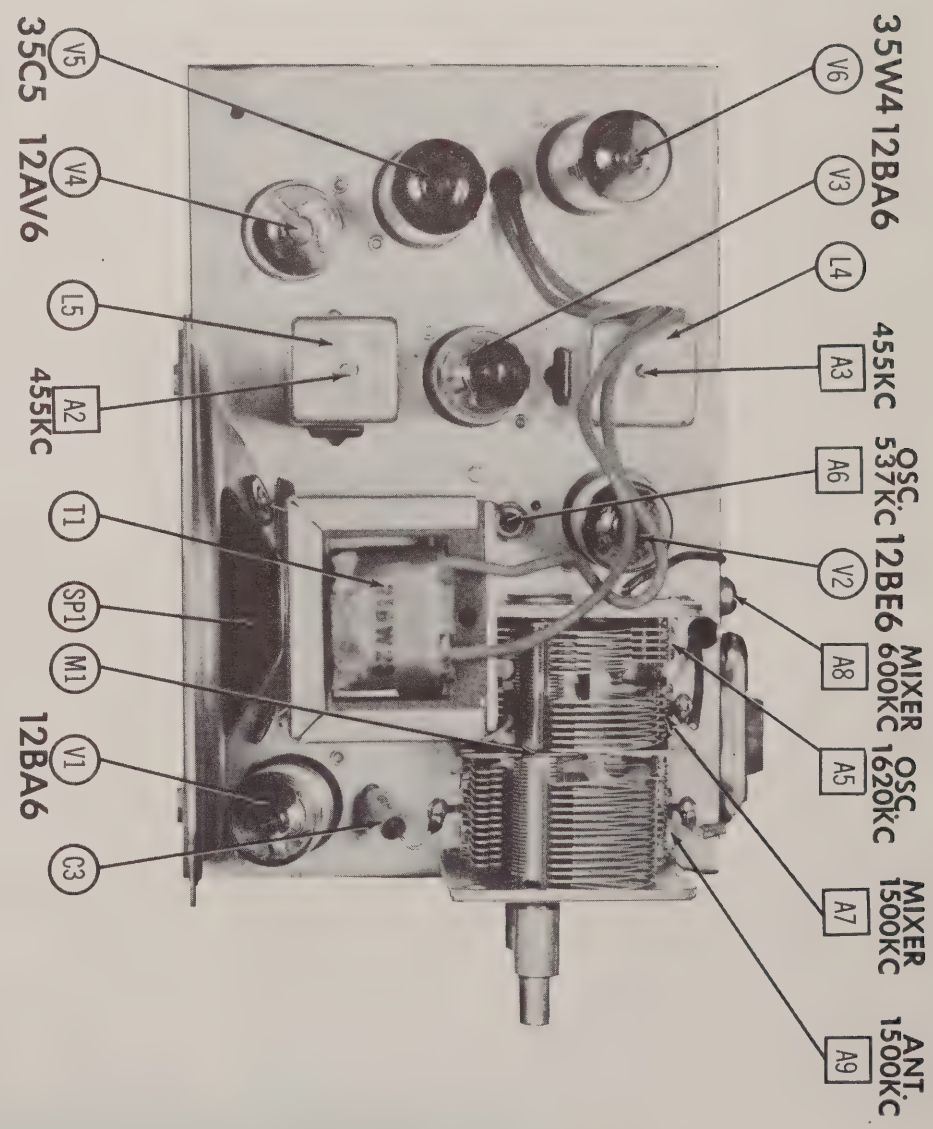
ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	CAPEHART PART No.	IRC PART No.	
R8A	6.8Meg	½		BTS-6.8Meg	
B	470KΩ	½	♦	BTS-470K	
C	470KΩ	½		BTS-470K	
R9	150Ω	½	3229-151	BTS-150	
R10	1500Ω	1	3232-152	BTA-1500	
R11	220KΩ	½	3229-224	BTS-220K	

♦ Items R8A, R8B, R8C, C9A, C9B, C9C, C9D, C9E are combined in one unit.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		CAPEHART PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2.5KΩ	3.4Ω	200Ω	.54Ω	Part of spkr.	A-3876	A-2928	RO-2	S-1X	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	CAPEHART PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	3.4Ω	750373A	ST-113 Mod. P4-X	4A07	

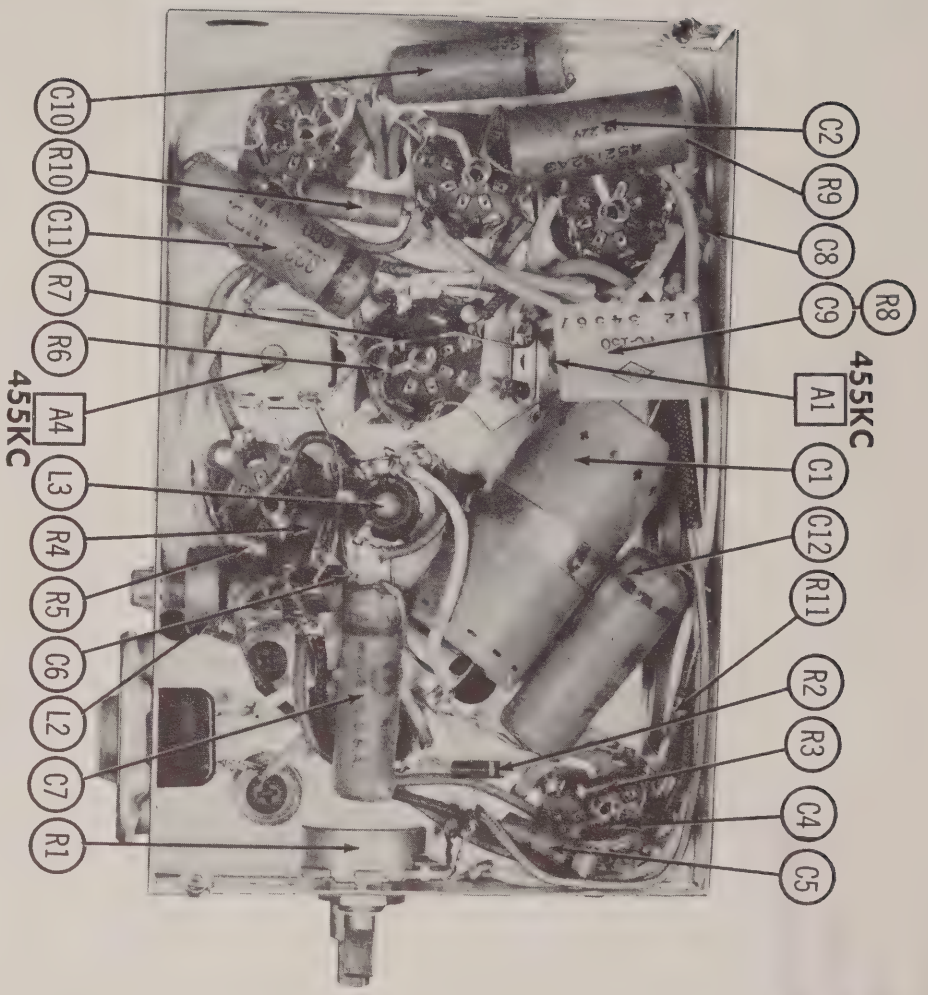
COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	CAPEHART PART No.	MERIT PART No.	
L1	Loop Ant.	3.2Ω		750207A-2		
L2	RF Coil	65Ω	12.5Ω	453247B-1		Secondary tapped @ 5.2Ω
L3	Osc. Coil	1Ω	11Ω	453248A-1		
L4	Input IF	13Ω	14.5Ω	452243A-1	BC-352	
L5	Output IF	13Ω	14.5Ω	452243A-1	BC-353	

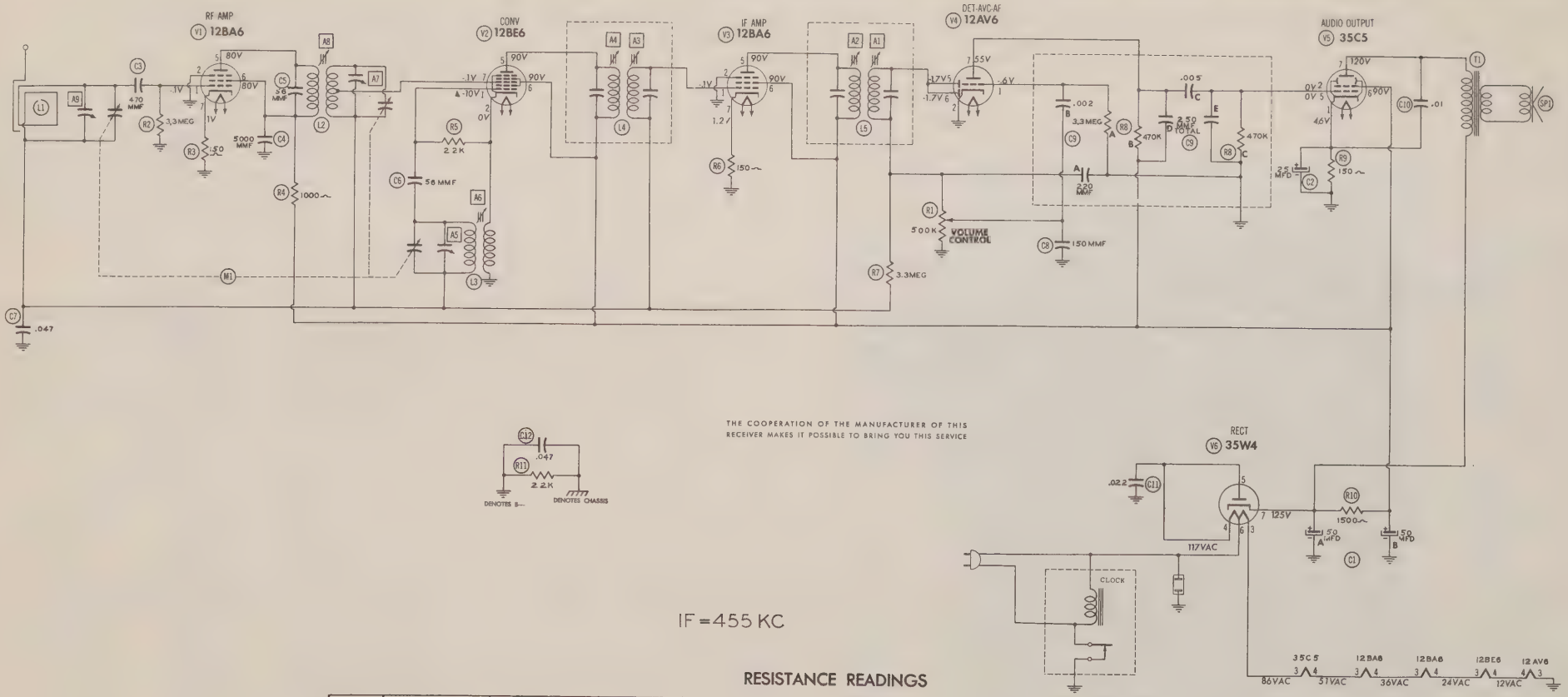
MISCELLANEOUS

ITEM No.	PART NAME	CAPEHART PART No.	NOTES
M1	Tuning Capacitor	650227A-1	70-470MMF, 18-210MMF, 16-150MMF
	Clock	750377A-1	
	Clock Grille	650323A-1	
	Clock Grille	650323A-2	(Sage Green)
	Clock Escutcheon	750198A-1	
	Clock Escutcheon	750198A-2	(Ivory)
	Cabinet	453246A-G1	Gray-Blue
	Cabinet	453246A-G4	Ivory
	Cabinet	453246A-G5	Ebony
	Cabinet	453246A-G7	Sage Green
	Cabinet Back	850130A-1	Gray-Blue
	Cabinet Back	850130A-4	Ivory
	Cabinet Back	850130A-5	Ebony
	Cabinet Back	850130A-7	Sage Green
	Knob	650325A-1	Tuning , Gray-Blue
	Knob	650325A-4	Tuning, Ivory
	Knob	650325A-5	Tuning, Ebony
	Knob	650325A-12	Tuning, Sage green
	Knob	452240A-1	Volume, Gray-Blue
	Knob	452240A-4	Volume, Ivory
	Knob	452240A-5	Volume, Ebony
	Knob	452240A-11	Volume, Sage Green
	Knob	453134A-1	Clock, Gray-Blue (3 used)
	Knob	453134A-4	Clock, Ivory (3 used)
	Knob	453134A-5	Clock, Ebony (3 used)
	Knob	453134A-7	Clock, Sage Green (3 used)

CHASSIS—BOTTOM VIEW



CAPEHART MODEL TC-62 (Ch. CR-71)



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BA6	7.1Meg	0Ω	36Ω	24Ω	†2.5KΩ	†2.5KΩ	150Ω
V 2	12BA6	22KΩ	1Ω	24Ω	12Ω	†1.5KΩ	†1.5KΩ	3.8Meg
V 3	12BA6	3.8Meg	0Ω	48Ω	36Ω	†1.5KΩ	†1.5KΩ	150Ω
V 4	12AV6	6.8Meg	0Ω	0Ω	12Ω	500KΩ	500KΩ	†470KΩ
V 5	35C5	150Ω	470KΩ	84Ω	48Ω	470KΩ	†1.5KΩ	†200Ω
V 6	35W4	INF	†0Ω	84Ω	119Ω	119Ω	113Ω	470KΩ

▲ TAKEN WITH VACUUM TUBE VOLTMETER

† MEASURED FROM PIN 7 OF V6

NOTE: FILAMENT RESISTANCE TAKEN WITH "OFF-ON" SWITCH IN "OFF" POSITION

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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192-4

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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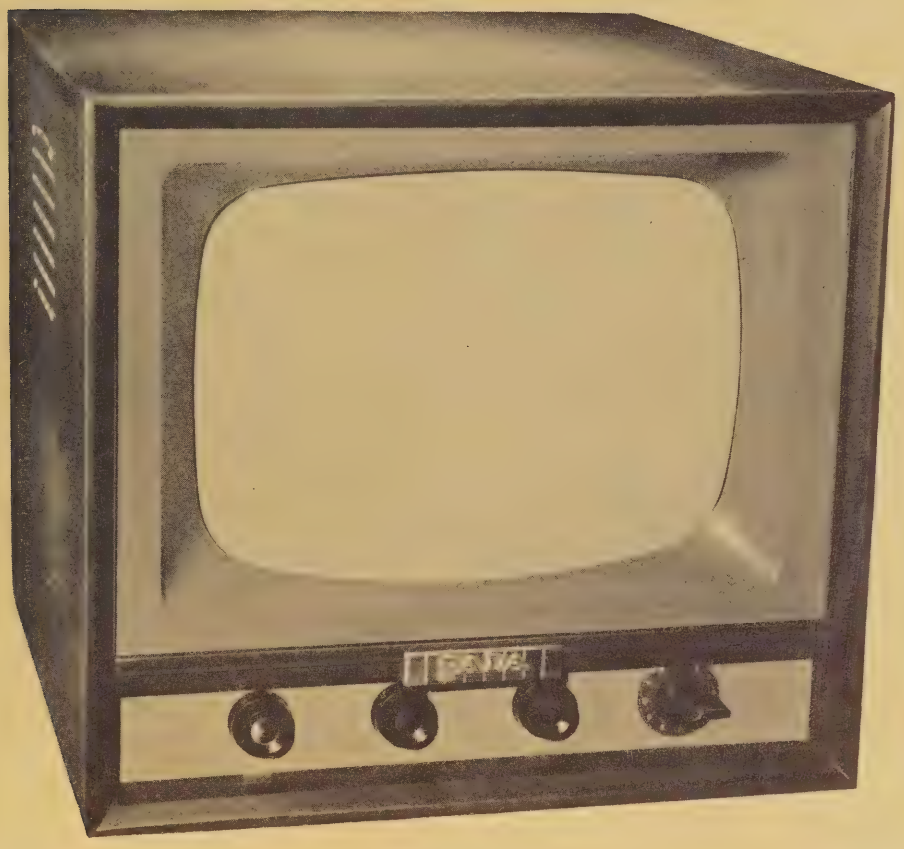

MODEL 173T

FADA
MODELS 173T, 175C, 177CD

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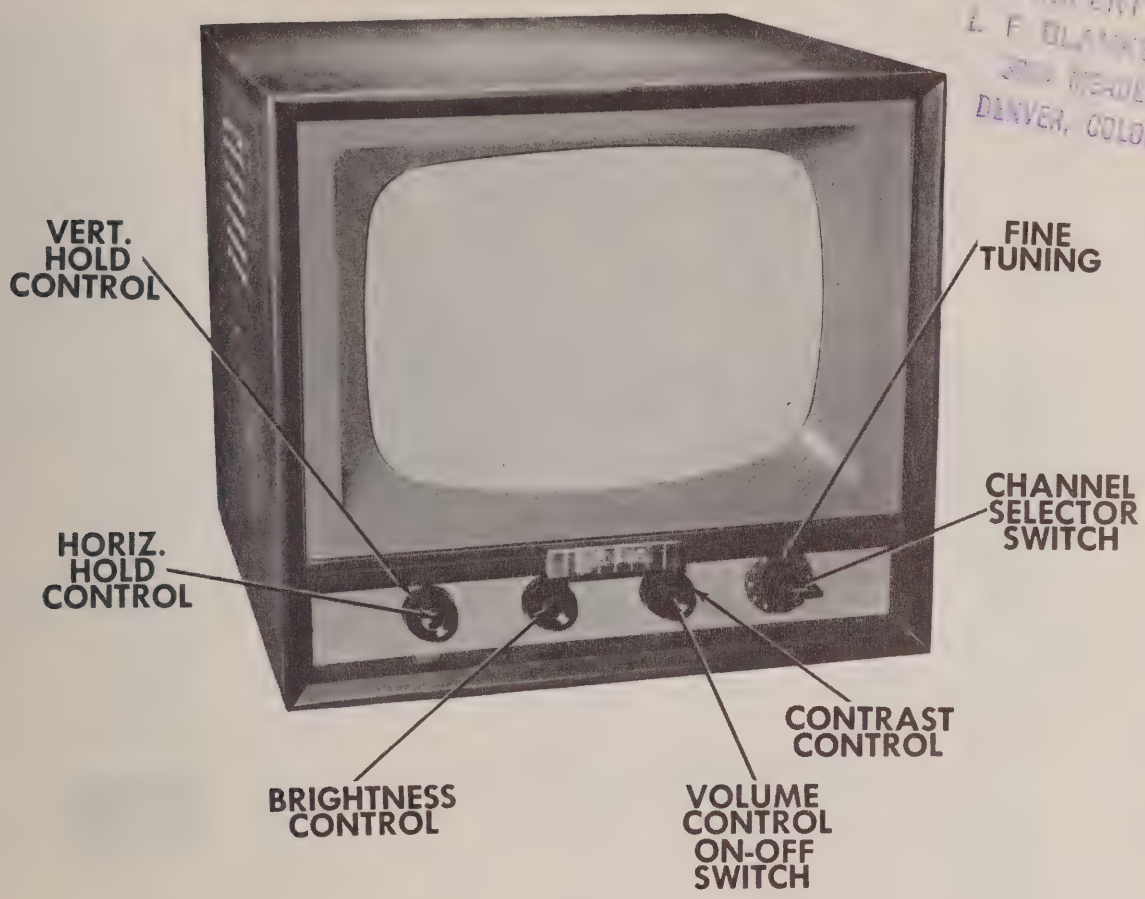

FADA
MODELS 173T, 175C, 177CD

FADA 173T

TRADE NAME	Fada Models 173T, 175C, 177CD
MANUFACTURER	Fada Radio & Electric Co., Inc., 525 Main St., Belleville, N.J.
TYPE SET	Television Receiver
TUBES	Twenty
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING 2.3 Amp @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13, Video IF 26.1MC, Sound IF 21.6MC (Intercarrier)

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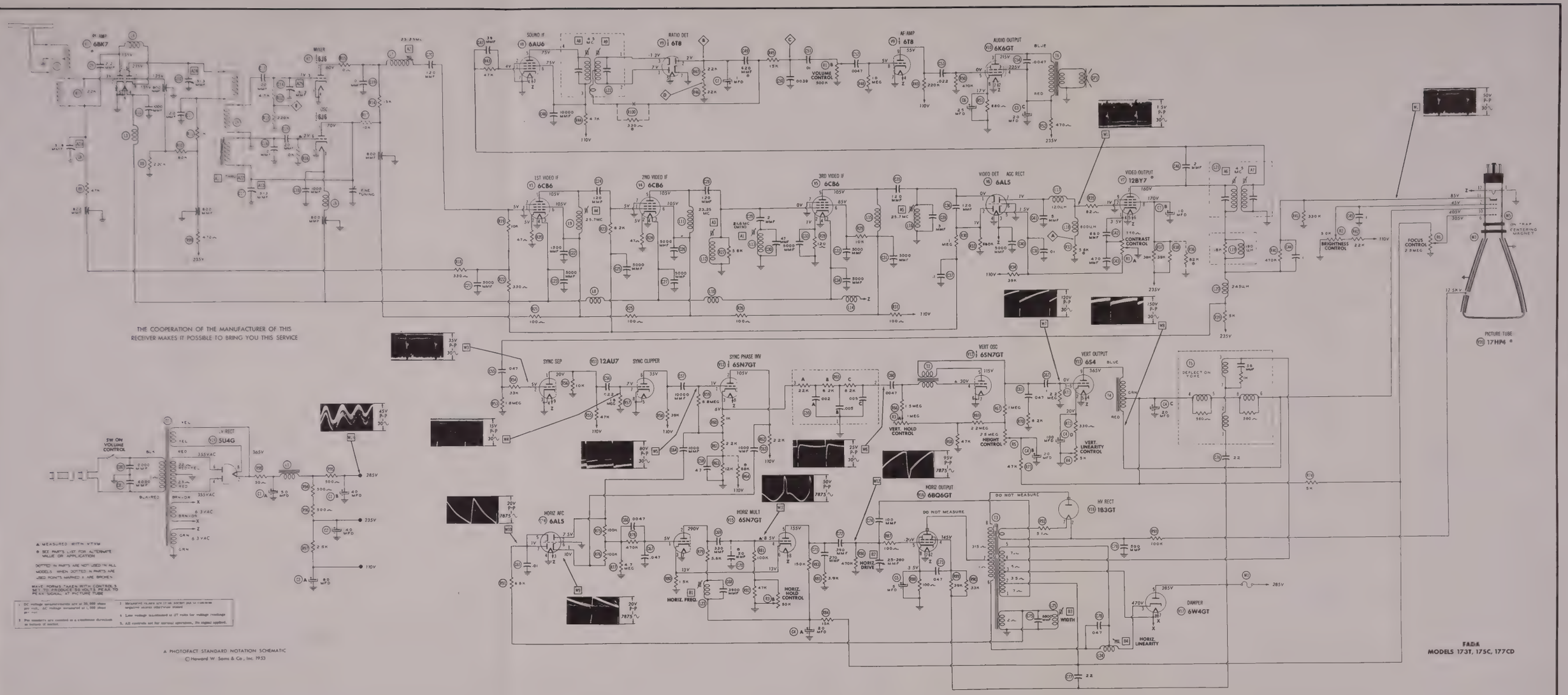

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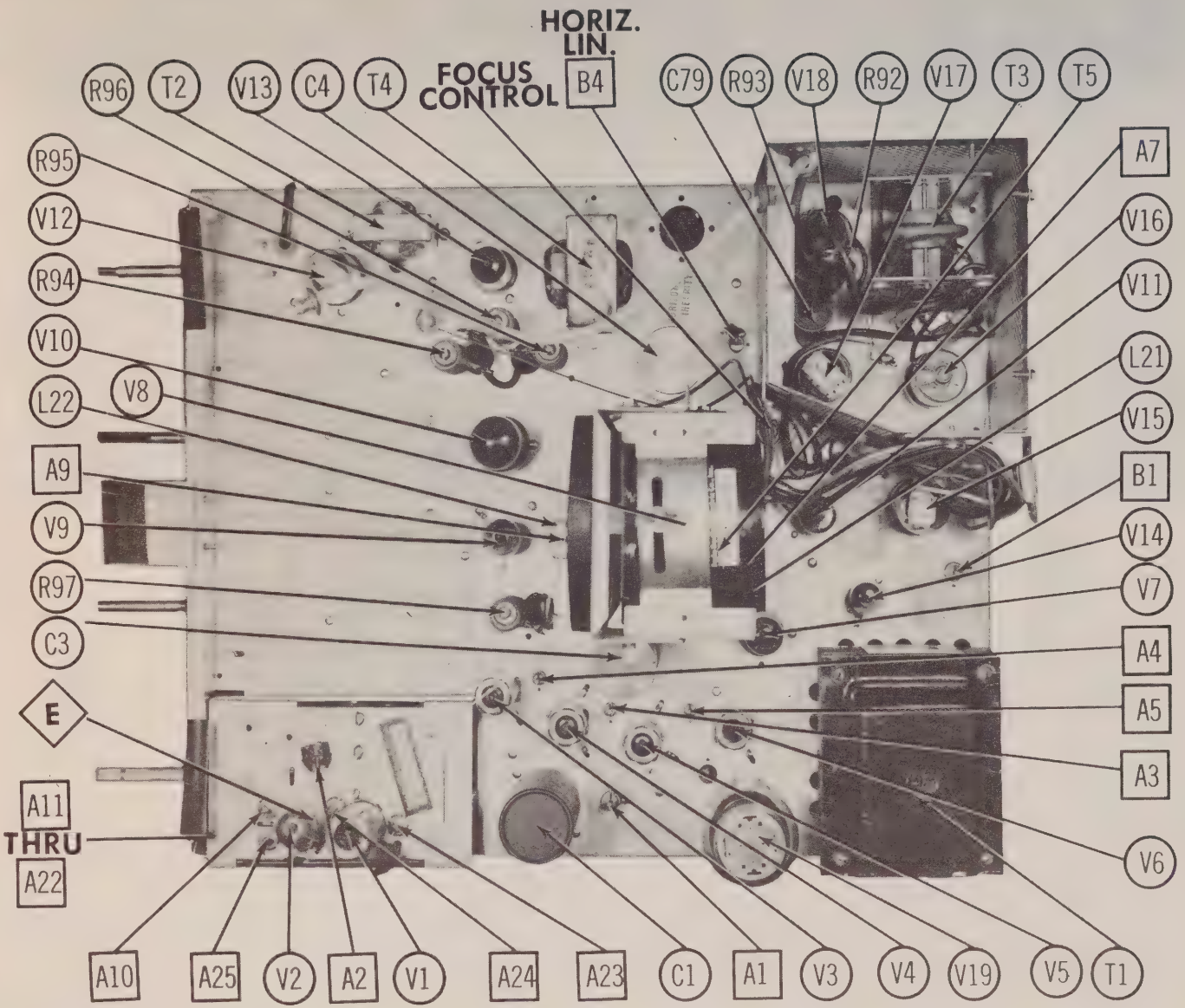
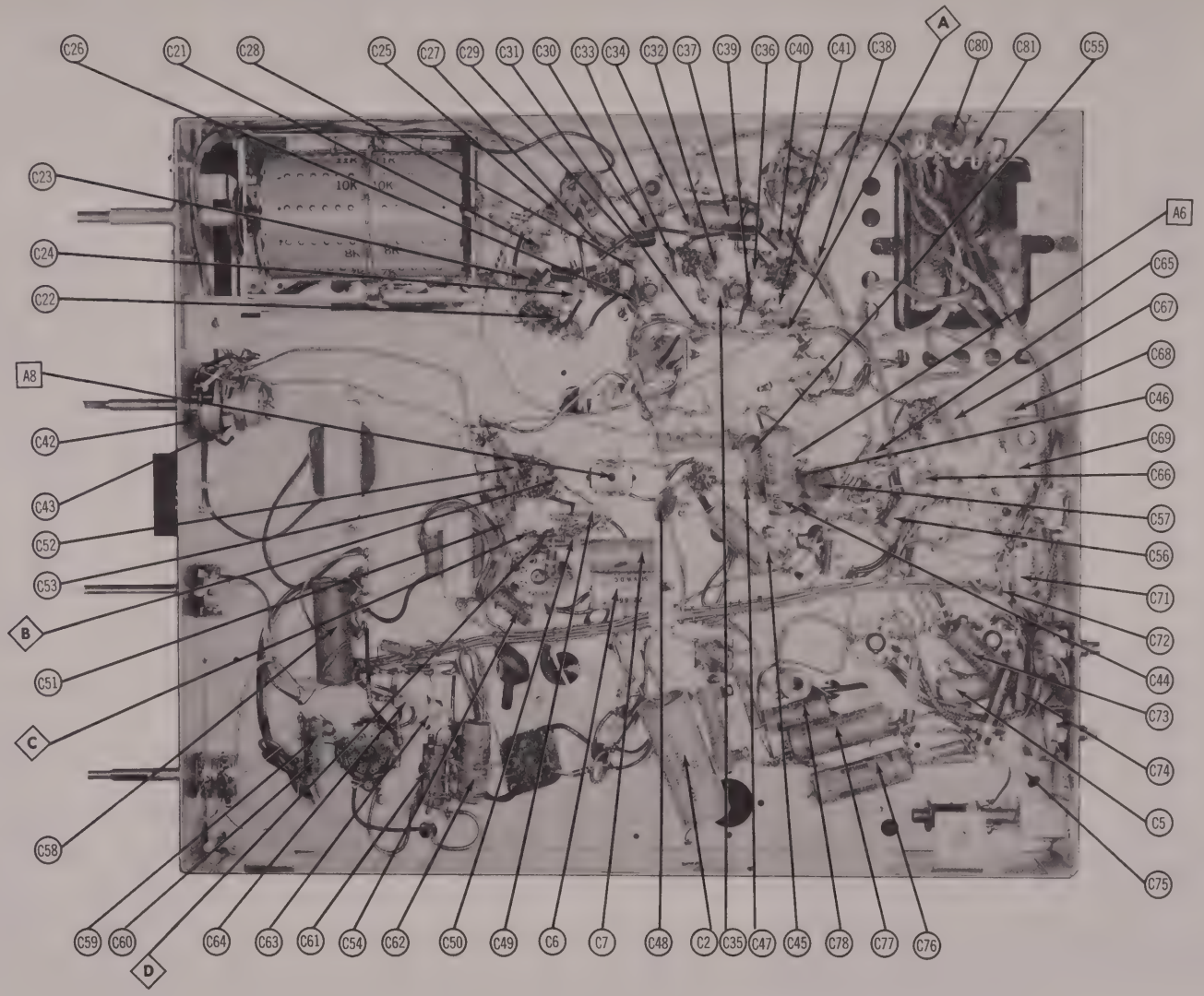
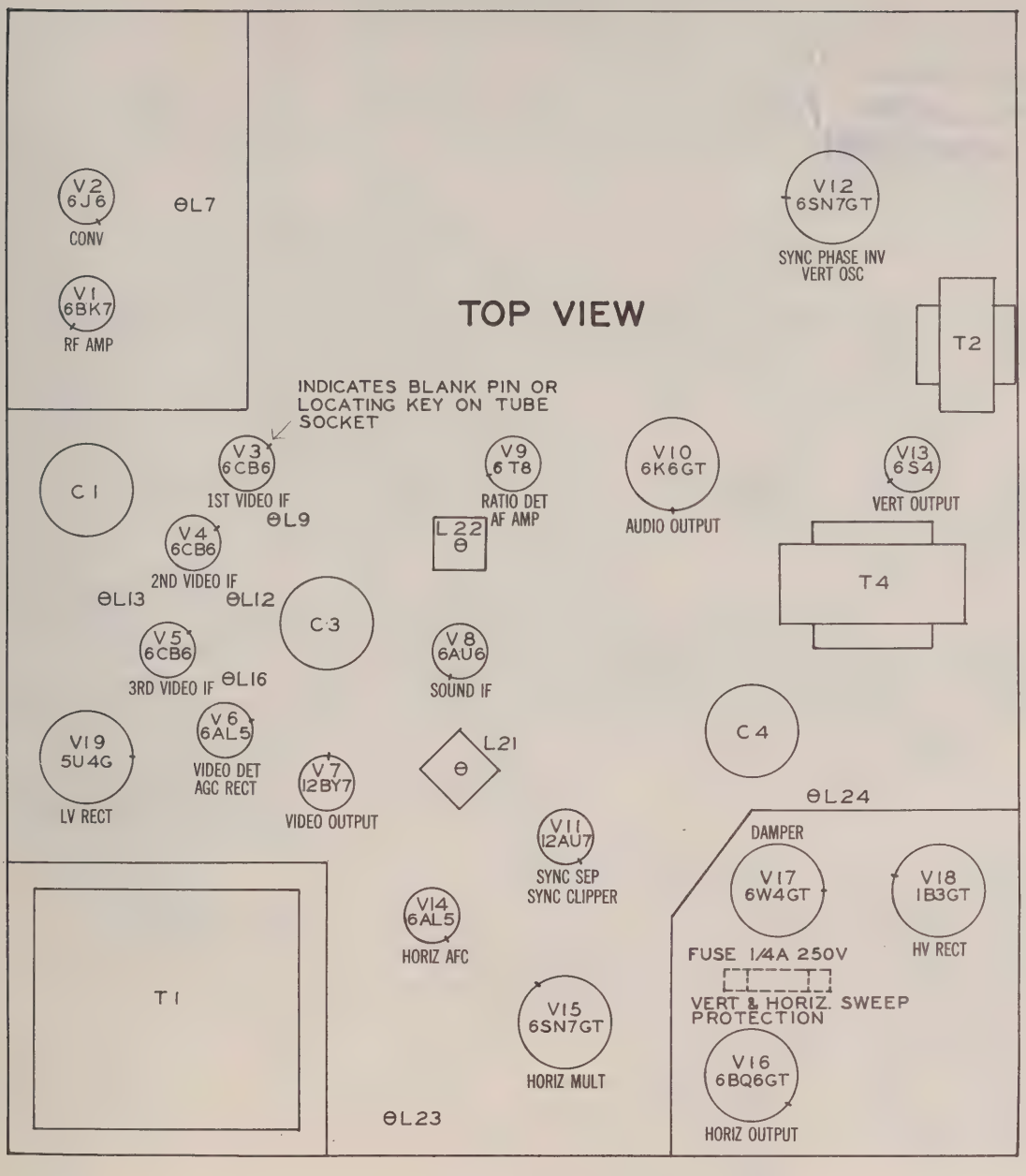


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound-V19

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster-V2, V3, V4, V5, V6
No pic, no sound, has snow-V1, V2, V3
No pic, has sound, has raster-V7, V20
Has pic, no sound-V8, V9, V10
Overloaded picture-V6

SYNC FAILURE
No vert. sync-V12
No horiz. sync-V12, V14, V15
No vert. or horiz. sync-V11, V12

SWEEP FAILURE
No raster, has sound-V15, V16, V17, V18, V20 Fuse (M1)
No vertical deflection-V13
Poor vert. linearity or foldover-V12, V13
Poor horiz. linearity or foldover-V15, V16, V17
Narrow picture-V15, V16, V17, V18, V19
Vert. off freq-V12
Horiz. off freq.-V12, V14, V15

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard can be eliminated by removing the horizontal multivibrator tube (V15).

VIDEO IF ALIGNMENT

Remove the converter tube (V2) from its socket and replace with a 6J6 which has pin 1 removed. This will disable the local oscillator and reduce the possiblitity of erroneous indications.
Connect the negative lead of a 4.5 volt battery to the ungrounded side of C37. Connect the postive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	21.6MC	Any	DC probe to point Ⓐ. Common to chassis.	A1	Adjust for MINIMUM deflection.
2.	"	"	23.25MC	"	"	A2, A3	Adjust for maximum deflection.
3.	"	"	25.7MC	"	"	A4, A5	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	24MC (10MC Swp)	21.6MC 22.7MC 26.1MC	Any	Vertical amp to point Ⓐ. Low side to chassis.		Check for response similar to fig. 1. If necessary retouch A2 thru A5 for desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
5.	.001MFD	High side to pin 2 (grid) of 12BY7 (V7A). Low side to chassis.	4.5MC (Unmod)	Any	DC probe to point Ⓑ. Common to chassis.	A6, A7, A8	Adjust for maximum deflection.
6.	"	"	"	"	DC probe to point Ⓒ. Common to point Ⓓ.	A9	Adjust for zero reading. A negative and positive reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	.001MFD	High side to pin 2 (grid) of 12BY7 (V7A). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. Amp. to point Ⓑ. Low side to chassis.	A6, A7, A8	Disconnect stabilizer capacitor C7. Adjust for curve of maximum amplitude and symmetry as in Fig. 2.
6.	"	"	"	"	"	Vert. Amp. to point Ⓒ. Low side to chassis.	A9	Reconnect capacitor C7. Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 3. SLIGHTLY retouch A8 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
Connect bias battery as under Video IF Alignment.
Complete oscillator alignment may not be necessary.
If the oscillator seems to be off frequency approximately the same amount for a majority of the channels it may be possible to correct them in one step using A10. It should be noted that this is an all channel oscillator circuit adjustment and should not be used to correct any individual channel. If adjustment of A10 will not bring all channels well within the range of the fine tuning control it will be necessary to adjust the channel strip adjustment for each channel that is off frequency.
The channel adjustment screws are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. amp to point Ⓐ Low side to chassis.	A11	Adjust to place sound marker in trap notch as in fig. 4. Video marker should be at 50%.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A12	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A13	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A14	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A15	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A16	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A17	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A18	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A19	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A20	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A21	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A22	

ALIGNMENT INSTRUCTIONS (CONT.)

RF AND MIXER ALIGNMENT

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp.)	205.25MC 209.75MC	12	Vert. Amp. thru 10KΩ to point (E) Low side to chassis.	A23, A24, A25	Adjust for response curve similar to Fig. 5 with markers above 90%.
9.	"	"	213MC (10MC Swp.)	211.25MC 215.75MC	13	"		Check for response curve similar to Fig. 5. If markers fall below 70% on any channel make slight compromise adjustments of A23, A24 and A25 with channel switch set to that channel. Recheck all other channels to see that they have not been seriously affected.
			201MC (10MC Swp.)	199.25MC 203.75MC	11			
			195MC (10MC Swp.)	193.25MC 197.75MC	10			
			189MC (10MC Swp.)	187.25MC 191.75MC	9			
			183MC (10MC Swp.)	181.25MC 185.75MC	8			
			177MC (10MC Swp.)	175.25MC 179.75MC	7			
			85MC (10MC Swp.)	83.25MC 87.75MC	6			
			79MC (10MC Swp.)	77.25MC 81.75MC	5			
			69MC (10MC Swp.)	67.25MC 71.75MC	4			
			63MC (10MC Swp.)	61.25MC 65.75MC	3			
			57MC (10MC Swp.)	55.25MC 59.75MC	2			

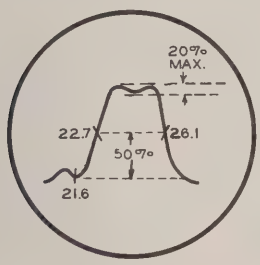


FIG. 1

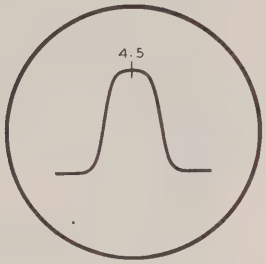


FIG. 2

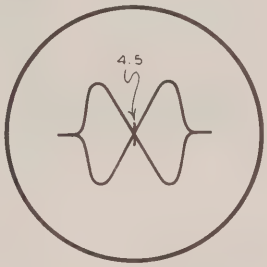


FIG. 3

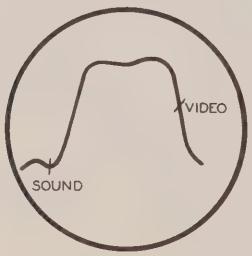


FIG. 4

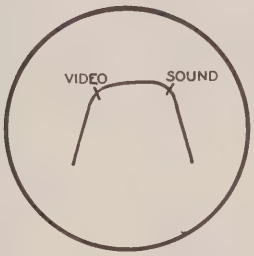
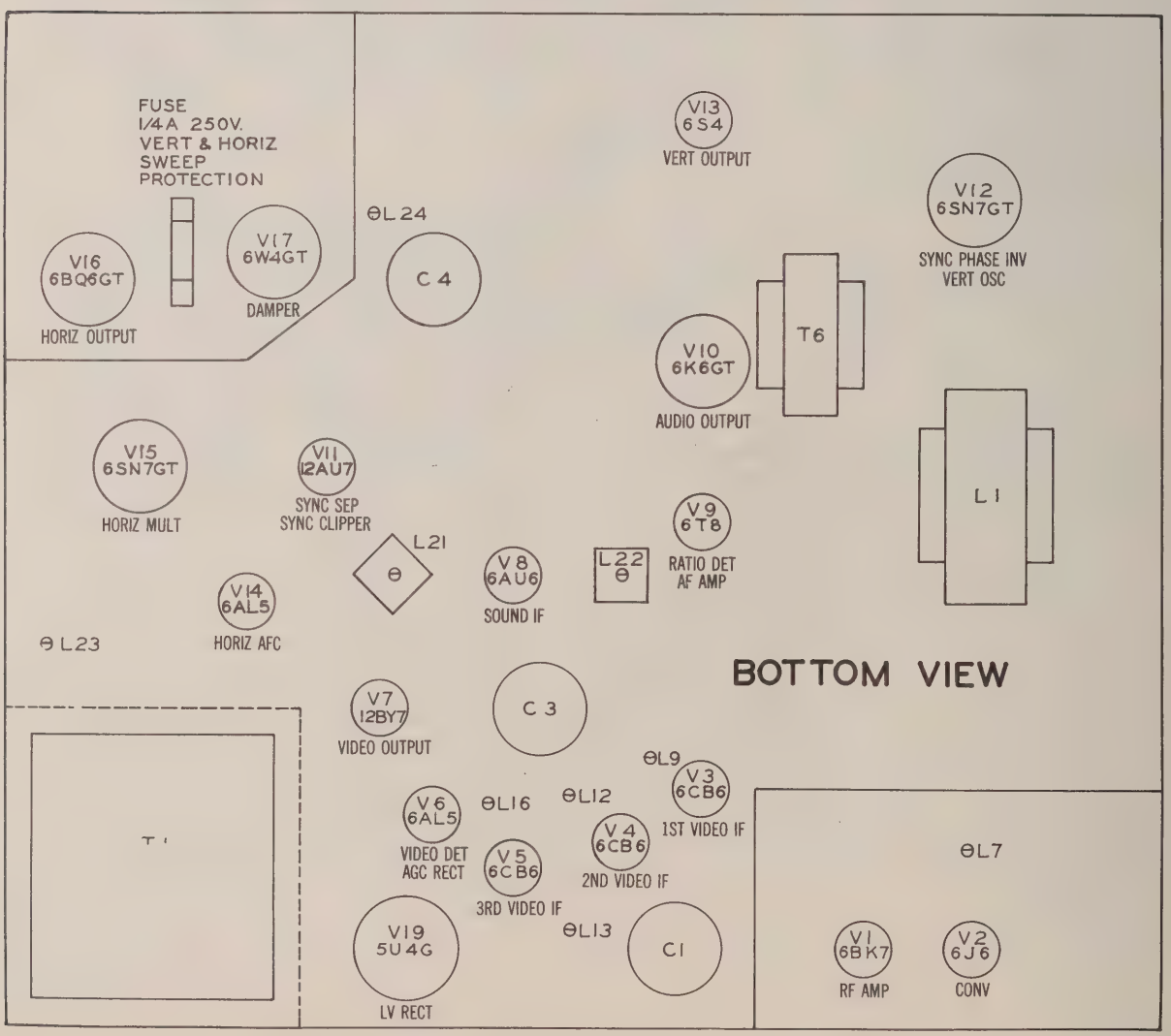


FIG. 5

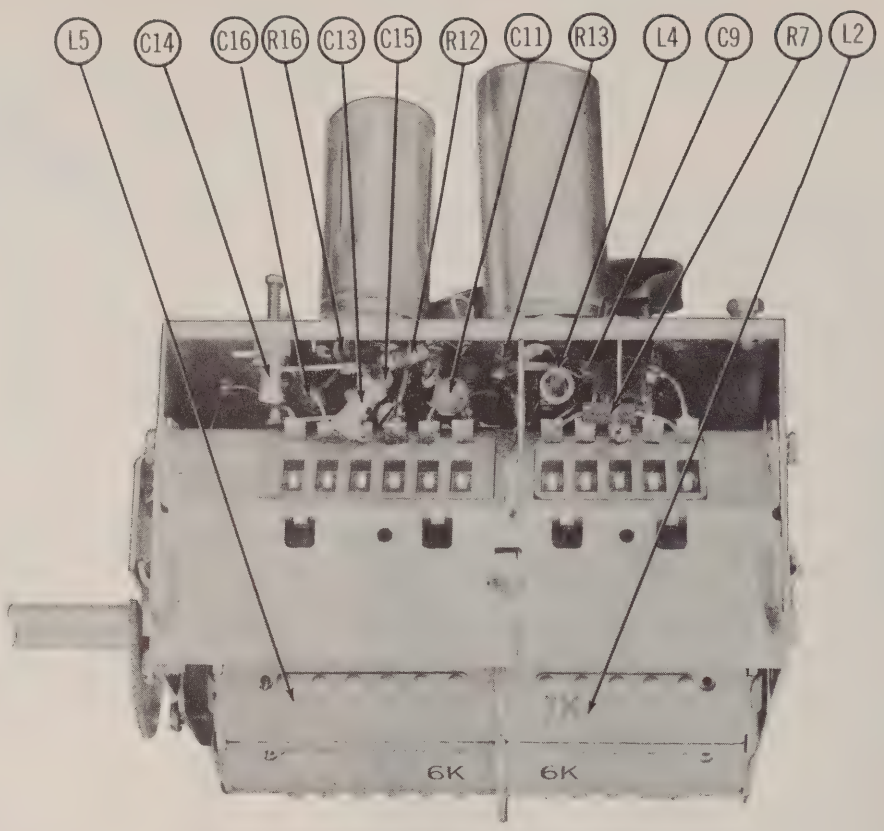
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BK7	INF	1.7Meg	0Ω	.1Ω	0Ω	†2.5KΩ	†105KΩ	INF	0Ω
V 2	6J6	14KΩ	19KΩ	.1Ω	0Ω	225KΩ	10KΩ	0Ω		
V 3	6CB6	1.7Meg	47Ω	.1Ω	0Ω	†3.9KΩ	†3.9KΩ	0Ω		
V 4	6CB6	1.7Meg	47Ω	.1Ω	0Ω	†3.8KΩ	†3.8KΩ	0Ω		
V 5	6CB6	.2Ω	120Ω	.1Ω	0Ω	†3.7KΩ	†13.7KΩ	0Ω		
V 6	6AL5	.2Ω	680KΩ	.1Ω	0Ω	725Ω	0Ω	5.6KΩ		
V 7	12BY7	25Ω	5.7KΩ	0Ω	0Ω	0Ω	.1Ω	†6.1KΩ	†20.6KΩ	0Ω
V 8	6AU6	47KΩ	0Ω	.1Ω	0Ω	†8.3KΩ	†8.3KΩ	0Ω		
V 9	6T8	INF	44KΩ	INF	.1Ω	0Ω	INF	0Ω	10 Meg	†220KΩ
V 10	6K6GT	INF	.1Ω	†2KΩ	†1.6KΩ	470KΩ	INF	0Ω	680Ω	
V 11	12AU7	8.6KΩ	1.8Meg	0Ω	0Ω	0Ω	†42.6KΩ	1.8Meg	0Ω	.1Ω
V 12	6SN7GT	6.8Meg	†5.8KΩ	15KΩ	1.9Meg	1.5Meg	0Ω	0Ω	.1Ω	
V 13	6S4	INF	2.4KΩ	2.2Meg	.1Ω	0Ω	2.2Meg	INF	INF	#6.4KΩ
V 14	6SL5	4.8Meg	4.8Meg	.1Ω	0Ω	6.8KΩ	0Ω	6.8KΩ		
V 15	6SN7GT	5.2Meg	#20.6KΩ	1.5KΩ	100KΩ	#165KΩ	1.5KΩ	0Ω	.1Ω	
V 16	6BQ7GT	INF	.1Ω	INF	†18.5KΩ	470KΩ	470KΩ	0Ω	100Ω	Top Cap #16.4Ω
V 17	6W4GT	INF	INF	500KΩ	INF	†610Ω	†610Ω	#7.1Ω	#7.1Ω	
V 18	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								Top Cap #331.4Ω
V 19	5U4G	INF	16.2KΩ	INF	23Ω	INF	22Ω	INF	16.2KΩ	
V 20	17HP4	0Ω	7.2KΩ	Pin 6 500KΩ	Pin 10 #5KΩ	Pin 11 198KΩ	Pin 12 .1Ω			

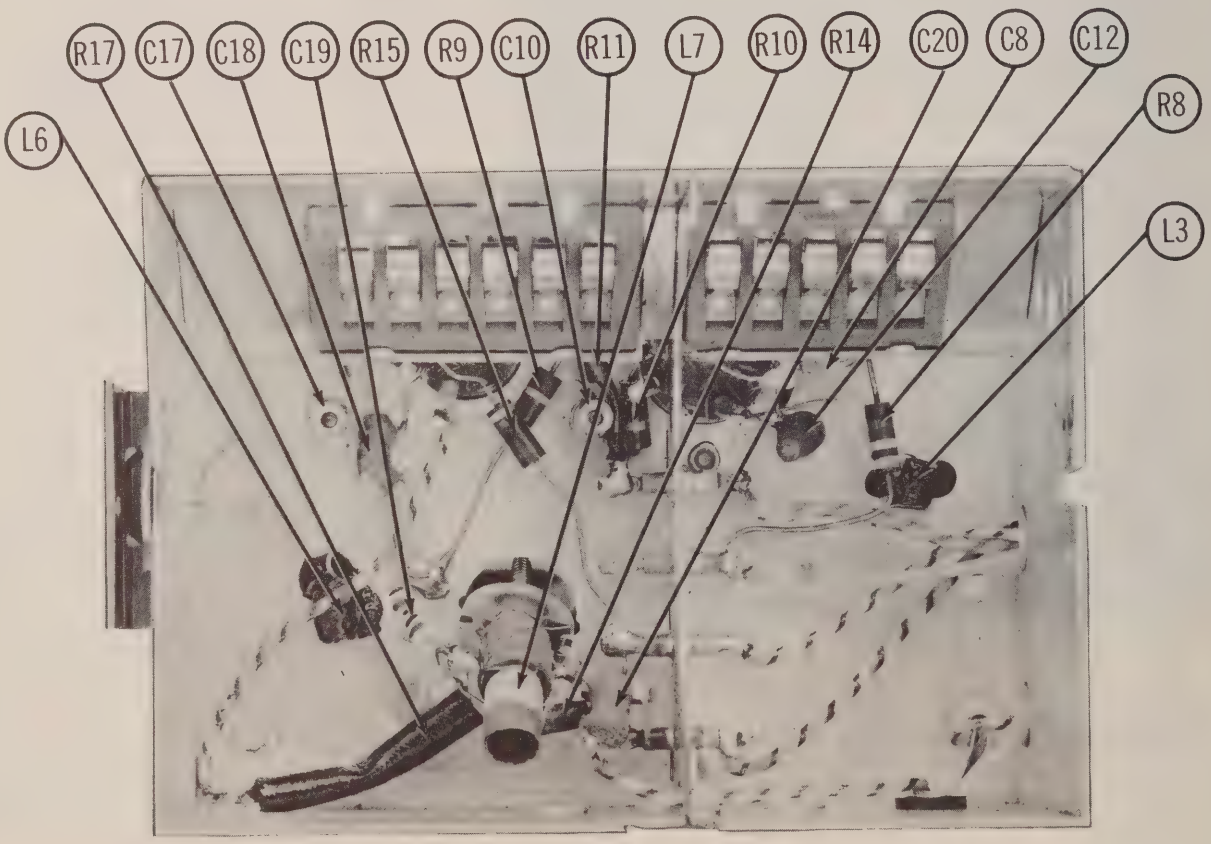
† MEASURED FROM PIN 2 OF V19
# MEASURED FROM PIN 3 OF V17



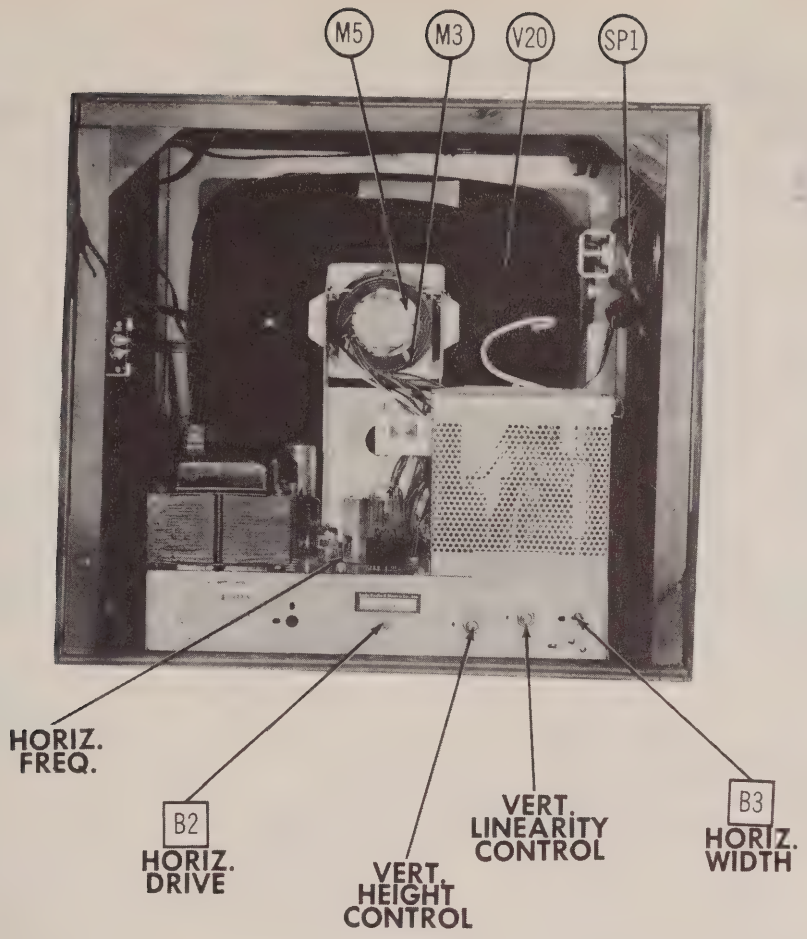
TUBE PLACEMENT CHART



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station preferably a test pattern. Set the horizontal hole control at the center of its range and adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally. Adjust the horizontal drive trimmer (B2) counter-clockwise as far as possible without the presence of a vertical white line or compression of the center of the picture. Adjust the width slug (B3) for a picture slightly wider than necessary to fill the picture mask horizontally. Adjust the horizontal linearity slug (B4) for a picture that is symmetrical from left to right.

DISASSEMBLY INSTRUCTIONS

① Chassis Removal

a. Remove 7 push on type control knobs from front panel.

b. Remove 7 wood screws. Remove rear cover.

c. Disconnect built-in antenna . Remove 2 wood screws. Remove antenna bracket.

d. Disconnect dspeaker.

e. Remove 4 chassis bolts. Remove chassis.

f. Remove 4 speaker nuts. Remove speaker. (Not necessary for chassis removal)

② Picture Tube Removal

a. Removal of chassis if necessary as outlined above.

③ Picture Tube Cleaning

a. Remove snap on name plate on front panel.

b. Remove 2 metal bolts and metal strip.

c. Hold safety glass during this operation.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: FADA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier	6BK7	6BK7	9AJ	
B	RF Amplifier	6BQ7	6BQ7	9AJ	
V2	Converter	6J8	6J8	7BF	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd. Video IF Amp.	6CB6	6CB6	7CM	
V5	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V6	Video Detector-AGC Rectifier	6AL5	6AL5	6BT	
V7A	Video Output	12BY7	12BY7	9BF	
B	Video Output	6AG7	6AG7	9Y	
V8	Sound IF Amp.	6AU8	6AU8	7BF	
V9	Ratio Detector-AF Amplifier	6T8	6T8	9E	
V10	Audio Output	6K8GT	6K8GT	7S	
V11	Sync Separator-Sync Clipper	12AU7	12AU7	9A	
V12	Sync Phase Inv.-Vert. Oscillator	6SN7GT	6SN7GT	8BD	
V13	Vert. Output	6S4	6S4	9AC	
V14	Horiz. AFC	6AL5	6AL5	6BT	
V15	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V16	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V17	Damper	6W4GT	6W4GT	4CG	
V18	HV Rectifier	1B3GT	1B3GT	3C	
V19	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: FADA PART No.	SYLVANIA PART No.		RTMA BASE TYPE	NOTES
V20A	17BP4	17BP4		12C	① Circuit changes necessary
B	17BP4 ①				
C	17RP4	17RP4			

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: FADA PART No.	AEROVOX PART No.	CENTRALAB / CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	.50	475	22.79	APH2-75	C041			FP397	TVL-3843
B	.40	475							
C2	40	450	22.82	PR8450/40		BR4046A		TC78	TVA-1712
C3A	.80	350	22.80D	AFH4-135		B048		FP450	TVL-3727
B	.10	350				BR1035			
C	.20	450							
C4A	.20	450	22.81	AFH4-80		D053		FP437	TVL-4740
B	.20	450							
C	.20	450							
D	.10	50							
C5	5	50	22.56	PR8150/4		BR550		TC30	TVA-1303
C6	25	50	22.66	PR850/25		BR255A		TC36	TVA-1306
C7	1	150	22.70	PR8150/4		BR415		TC40	TVA-1402
C8	3-9				829-10		NP0K-2R2		
C9	2.2				TCZ-2.2				STCCB-V22
C10	5-3				829-3		NP0K-100	CT585A	
C11	120			SI120	D8-121	TM5T12	GP2K-121	UC-5312	5GA-T12
C12	1000			SI1000	D8-102	TM5D1	GP2L-102	UC-531	5HK-D1
C13	100			SI100	D8-101	TM5T1	GP1K-101	UC-531	5GA-T1
C14	5-3				829-3			CT585A	
C15	30			SI30NP0	TCZ-30		NP0K-300	ZT-543	STCC-Q3
C16	10			SI10N750	TCN-10		N750K-100	NT-541	STCU-Q1
C17	5-3				829-3			CT585A	
C18	1000			SI1000	D8-102	TM5D1	GP2L-102	UC-531	5HK-D1
C19	10			SI10NP0	TCZ-10		NP0K-100	ZT-541	STCC-Q1
C20	120			SI120	D8-121	TM5T12	GP2K-121	UC-5312	5GA-T12
C21	5000		17.44	BPD-005	DD-502	TM5D5	81L-005	DC-525	5HK-D5
C22	5000		17.45	SI1500	D8-152	TM5D15	GP2L-152	UC-5215	5HK-D15
C23	5000		17.44	BPD-005	DD-502	TM5D5	81L-005	DC-525	5HK-D5
C24	120		17.106	SI120	D8-121	TM5T12	GP2K-121	UC-5312	5GA-T12
C25	5000		17.44	BPD-005	DD-502	TM5D5	81L-005	DC-525	5HK-D5
C26	5000		17.44	BPD-005	DD-502	TM5D5	81L-005	DC-525	5HK-D5
C27	5000		17.44	BPD-005	DD-502	TM5D5	81L-005	DC-525	5HK-D5
C28	120		17.106	SI120	D8-121	TM5T12	GP2K-121	UC-5312	5GA-T12
C29	2		17.127		TCZ-2.2		NP0K-2R2		STCCB-V22
C30	47		17.130	SI47NP0	TCZ-47		NP0K-470	ZT-5447	STCC-Q47
C31	5000		17.44	BPD-005	DD-502	TM5D5	81L-005	DC-525	5HK-D5
C32	5000		17.44	BPD-005	DD-502	TM5D5	81L-005	DC-525	5HK-D5
C33	5000		17.44	BPD-005	DD-502	TM5D5	81L-005	DC-525	5HK-D5
C34	5000		17.44	BPD-005	DD-502	TM5D5	81L-005	DC-525	5HK-D5
C35	120		17.106	SI120	D8-121	TM5T12	GP2K-121	UC-5312	5GA-T12
C36	120		17.106	SI120	D8-121	TM5T12	GP2K-121	UC-5312	5GA-T12
C37	1	200	12.49	PR8-1	DF-104	PT2P1		PT401	4TM-P1
C38	.01	400	12.72	P488-01	D8-103	PTE4S1	GP2-333-103	PT411	4TM-S1
C39	5		17.131				NP0K-030		
C40	5000		17.44	BPD-005	DD-502	TM5D5	81L-005	DC-525	5HK-D5
C41	5		17.79	SI5	TCZ-4.7		GP1K-050	UC-555	5GA-V5
C42	680		17.108	SI680	D8-681	5H5TT	GP2K-681	UC-5368	5GA-T68
C43	470		17.107	SI470	D8-471	5H5T5	GP2K-471	UC-5347	5GA-T47
C44	.1	600	12.80	P688-1	DF-104	PTE6P1		PT601	6TM-P1
C45	.1	400	12.75	P488-1	DF-104	PTE4P1		PT401	4TM-P1
C46	2		17.59				N750K-020		
C47	39		17.105	SI39	D8-390	5W5Q4	GP1K-390	UC-5439	5GA-Q39
C48	10000		17.80		BPD-01	DD-103	TM5S1	82L-01	5HK-S1
C49	820	500	17.125						Note 1
C50	.0039	400	12.71	P688-004	D8-392	PTE6D4	GP2-333-392	PT624	6TM-D4
C51	.01	400	12.72	P488-01	D8-103	PTE4S1	GP2-333-103	PT411	4TM-S1
C52	.0047	400	12.68	P488-0047	D8-472	PTE6D47	GP2-333-472	PT6247	6TM-D47
C53	022	400	12.82	P488-022	DF-203	PTE4S22		PT4122	4TM-S22
C54	.0047	400	12.68	P688-0047	D8-472	PTE6D47	GP2-333-472	PT6247	6TM-D47
C55	.047	400	12.67	P488-047	DF-503	PTE4S47		PT4147	4TM-S47
C56	.022	400	12.82	P488-022	DF-203	PTE4S22		PT4123	4TM-S22

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: FADA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C57	10000		17.80	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C58	.47	200	12.92	P388-47		PJ2P5		PT405	3TM-P47	
C59A	.002			P688-002		PTE6D2		PT6S2		
B	.005		±167.1	P688-005	±PC-100	PTE6D5	±405-01	PT6S5	±101C1	
C	.005			P688-005		PTE8D5		PT825		
C60	.0047	600	12.83	P688-0047	D8-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C61	.047	400	12.67	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C62	.1	400	12.75	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C63	1000		17.109	SI1000	D8-102	TM5D1	GP2L-102	UC-531	5HK-D1	
C64	1000		17.109	SI1000	D8-102	TM5D1	GP2L-102	UC-531	5HK-D1	
C65	.01	400	12.72	P488-01	D8-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C66	.0047	400	12.68	P488-0047	D8-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C67	.047	400	12.67	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C68	3900	500	17.113	1464-004		IDR5D4		MC2438	MS-24	
C69	330	500	17.69	1469-00035			5R5Q5			
C70	50	500	17.49	1469-00005		5R5Q5		MCB235	MS-35	Note 2
C71	270	500	17.123	1469-0003		5R5T3		MCB241	MS-33	
C72	390		17.38	SI390	D8-390	5R5T4	GP2K-391	UC-5339	5GA-T39	
C73	.047	600	12.86	P588-047	DF-503	PTE5S47		PT5147	5TM-S47	
C74	100	1000	17.129	1468L-HV-0001				MCK310	15GAB-T1	
C75	6800		17.35		D8-682		GP2-333-682		5HK-D68	
C76	.22	400	12.77	P488-22		PTE4P22		PT4025	4TM-P22	
C77	.22	400	12.77	P488-22		PTE4P22		PT4025	4TM-P22	
C78	.047	400	12.67	P488-047		PTE4S47		PT4147	4TM-S47	
C79	500	20000	17.116	HV20C	TV3-502	MM-C20T5	413-501		20DK-T5	
C80	10000		17.136	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C81	10000		17.136	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	

Note 1. Some Models use 330MMF in this application.
Note 2. Not used in all Models.
• Items C59A, C59B, C59C, R65A, H65B, R65C are combined in one unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: FADA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	750Ω	2	52.64	QJ-270*	RTV-109		WF751-T2S1	Contrast Tap ② 500Ω Wire-Wound-Panel
B	500KΩ	½					UR5A	Volume-Rear
C	Switch						UR-26	Attach to R1B
R2A	50KΩ	½	52.69	QJ1-123	AG-44-S	B-31	U-35	Brightness
B	Shaft		Not Req.	Not Req.	RS-3	Not Req.	Not Req.	Attach to R2A
R3A	1 Meg	½	52.68	QJ-168**	RTV-110	S3B-510	UF16L	Vert. Hold-Panel
B	50KΩ	½					UR54L	Horiz. Hold-Rear
R4A	5000Ω	2	52.68	W-5000	A43-5000	VK-135	R5000L	Vert. Linearity -Wire Wound
B	Shaft		Not Req.	Not Req.	FK8-1/4	Not Req.	Not Req.	Attach to R4A
R5A	2.5Meg	½	52.24	QJ1-239	AG-84-S	AB-83	SU-565	Height
B	Shaft		Not Req.	Not Req.	FK8-1/4	AK-1	Not Req.	Attach to R6A
R6A	2.5Meg	½	52.74	QJ1-239	AG-84-S	AB-83	SU-565	Focus
B	Shaft		Not Req.	Not Req.	FK8-1/4	AK-1	Not Req.	Attach to R6A

• CONCENTRIKIT EQUIVALENT-KIT K-3, BASE ELEMENTS & SHAFTS W17-105X & P4-124 (Panel) B13-133 & R1-212 (Rear) & SWITCH T8-1.
•• CONCENTRIKIT EQUIVALENT KIT K-2, BASE ELEMENTS AND SHAFTS B11-137 & P1-126 (Panel) B11-123 & R1 212 (Rear).

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: FADA PART No.	IRC PART No.	NOTES
R7	22KΩ	½		BTS-22K	
R8	47KΩ	½		BTS-47K	
R9	220KΩ	½		BTS-220K	
R10	180KΩ 5%	½		BTS-180K 5%	
R11	1000Ω	½		BTS-1000	
R12	4700Ω	½		BTS-4700	
R13	220KΩ	½		BTS-220K	
R14	15KΩ	½		BTS-15K	
R15	10Ω	½			
R16	10KΩ	½		BTS-10K	
R17	10KΩ	½		BTS-10K	
R18	330Ω	½		BTS-330	
R19	10KΩ	½	33.11	BTS-10K	
R20	47Ω	½	32.197		
R21	100Ω	½	32.2	BTS-100	
R22	330Ω	½	32.67	BTS-330	
R23	8200Ω	½	32.71		
R24	47Ω	½	32.197		
R25	100Ω	½	32.2	BTS-100	
R26	100Ω	½	32.2	BTS-100	
R27	5600Ω	½	32.126	BTS-5600	
R28	120Ω	½	32.118	BTS-120	
R29	10KΩ	½	32.11	BTS-10K	
R30	1Meg	½	33.33	BTS-1Meg	
R31	100Ω	½	32.2	BTS-100	
R32	5600Ω	½	32.126	BTS-5600	Note 1
R33	680KΩ	½	32.35	BTS-680K	
R34	39KΩ	1	32.103	BTA-39K	
R35	82Ω	½	32.135		
R36	82KΩ	1	32.412	BTA-82K	Note 2 & 3
R37	39KΩ	2	32.660	BTB-39K	
R38	39KΩ	2	32.660	BTB-39K	
R39	5000Ω	10	117.80	1 3/4A-5000	
R40	470KΩ	½	32.92	BTS-470K	
R41	330KΩ	½	32.205	BTS-330K	
R42	22KΩ	½	32.183	BTS-22K	
R43	47KΩ	½	32.15	BTS-47K	
R44	4700Ω	1	32.74	BTA-4700	
R45	15KΩ	½	32.12	BTS-15K	
R46	22KΩ	½	32.13	BTS-22K	
R47	22KΩ	½	32.13	BTS-22K	
R48	10Meg	½	33.99	BTS-10Meg	
R49	220KΩ	½	33.16	BTS-220K	
R50	470KΩ	½	32.92	BTS-470K	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: FADA PART No.	IRC PART No.	NOTES
R51	680Ω	1	32.115	BTA-680	
R52	470Ω	1	32.399	BTA-470	
R53	1.8Meg	½	32.208	BTS-1.8Meg	
R54	33KΩ	½	32.14	BTS-33K	
R55	47KΩ	½	32.15	BTS-47K	
R56	10KΩ	½	32.11	BTS-10K	
R57	1.8Meg	½	32.208	BTS-1.8Meg	
R58	39KΩ	1	32.103	BTA-39K	
R59	6.8Meg	½	32.46	BTS-6.8Meg	
R60	1000Ω	½	32.8	BTS-1000	
R61	2200Ω	1		BTA-2200	
R62	2200Ω	½	32.60	BTS-2200	
R63	12KΩ	½	32.142	BTS-12K	
R64	68KΩ	½	32.411	BTA-68K	Note 3
R65A	22KΩ	½		BTS-22K	
B	8200Ω	½	±167.1	BTS-8200	
C	8200Ω	½		BTS-8200	
R66	1.5Meg	½	32.147	BTS-1.5Meg	
R67	1Meg	½	32.33	BTS-1Meg	
R68	47KΩ	½	32.15	BTS-47K	
R69	2.2Meg	½	32.34	BTS-2.2Meg	
R70	8200Ω	½	32.77	BTS-8200	
R71	2.2Meg	½	32.34	BTS-2.2Meg	
R72	330Ω	½	32.67	BTS-330	
R73	47KΩ	½	32.15	BTS-47K	
R74	150Ω	10	117.80	1 3/4A-5000	
R75	100KΩ	½	32.89	BTS-100K	
R76	100KΩ	½	32.89	BTS-100K	
R77	4.7Meg	½	32.98	BTS-4.7Meg	
R78	470KΩ	½	32.92	BTS-470K	
R79	5600Ω	½	32.126	BTS-5600	
R80	1500Ω 5%	½	32.285	BTS-1500 5%	
R81	100KΩ	½	32.89	BTS-100K	
R82	47KΩ	½	32.15	BTS-47K	
R83	150KΩ	½	32.90	BTS-150K	
R84	15KΩ	2	32.655	BTB-15K	
R85	3900Ω	½	32.202	BTS-3900	
R86	470KΩ	½	32.92	BTS-470K	
R87	100Ω	½	32.2		
R88	100Ω	2	32.635	BW-2-100	
R89	39KΩ	2	32.660	BTB-39K	
R90	33KΩ	2	32.659	BTB-33K	
R91	6800Ω	½	32.10	BTS-6800	
R92	5.1Ω	½	32.137		

RESISTORS (CONT.)

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: FADA PART No.	IRC PART No.	NOTES
R93	100KΩ	1	32.373		
R94	500Ω	20	117.74	2D-500	
R95	500Ω	20	117.74	2D-500	
R96	500Ω	20	117.74	2D-500	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: FADA PART No.	IRC PART No.	NOTES
R97	2500Ω	25	117.83	4JE-2500	
R98	50Ω	10	117.58		
R99	470Ω	½	32.173	BTS-470	
R100	330Ω	½	32.67	BTS-330	

Note 1. Some Models use a 8200Ω resistor in this application.
Note 2. Some Models use a 22KΩ resistor in this application.
Note 3. Not used in all Models.
• Items R65A, R65B, R65C, C59A, C59B, C59C are combined in one unit.
Note 4. Used with alternate ratio det. transformer.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: FADA PART No.	STANCOR PART No.	MERIT PART No	CHICAGO PART No	TRIAD PART No
T1	117VAC	5VAC	6.3VAC		42.61	P-8166	P-3059	TP-360	R-37BC
	② 2.3A	.250ADC	② 3A①	& 1.2A					
				SEC. 4					
				6.3VAC					
				② 8.7A					

① This winding will run at 6A.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: FADA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T2	130Ω	110Ω	42.53	A-8111	A-3000	TRO-1	A-97X	Vert. Osc. Trans.
T3	326Ω tap ② 11Ω	9.9Ω tap & .77Ω, 4.2Ω & 2Ω	37.272	A-8130 ②	HVO-7①④	TFB-5 ⑤	D-14 ⑥	Horiz. Output Trans.
		SEC. 2						
		20						
		SEC. 3						
		0Ω						
T4	1480Ω tap ②		42.82	A-8123	A-3037	TSO-5③⑦	A-99X ③	Vert. Output Trans.
	10.5Ω							
T5A	19Ω		37.273	DY-9A	MDF-70	TY-3	Y-17	Horiz. Deflection Coils
B	84Ω							Vert. Deflection Coils

1. Mount on top of chassis.
2. Use with width coil, WC-5
3. Use with one mounting hole.
4. Use with width coil MWC-1
5. Use width coil (with AGC wdg.) with approx. range of 2-29 Millihenries
6. Use with width coil WC-11
7. Tie red & green leads together

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: FADA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T6	4.5KΩ	2.6Ω	375Ω	.4Ω	42.57	A-3877	A-2930	RO-8	S-3X	

SPEAKER

ITEM No.	RATINGS: SIZE	RATINGS: FIELD	RATINGS: V. C. IMP.	REPLACEMENT DATA: FADA PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1	6"	PM	2.6Ω	107.46	ST-108 Mod. P8-X	6A1	

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D.C. RESISTANCE	RATINGS: INDUCTANCE @ CURRENT (1000 Cy.)	REPLACEMENT DATA: FADA PART No.	STANCOR PART No	MERIT PART No.	CHICAGO PART No.	TRIAD PART No
L1	.250ADC	60Ω	1.5 Hy.	42.56	C-2326 ①	C-2996 ①	TR-1733 ①	C-17X ①

① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: FADA PART No.	MERIT PART No	NOTES
L2	Ant. Coils	0Ω	0Ω			Pri. tapped
L3	Fil. Choke	0Ω				
L4	Neutralizing Coil	0Ω				
L5	RF, Mixer Grid & Osc. Coils	0Ω				
L6	Fil. Choke	0Ω				
L7	Int. Video IF	1Ω			TV-103 •	
L8	Fil. Choke	0Ω		37.89		
L9	2nd. Video IF	.2Ω		37.90	TV-102 or TV-112	
L10	Fil. Choke	0Ω		37.89		
L11	RF Choke	1.8Ω		37.197		
L12	3rd. Video IF	.2Ω		37.99	TV-102 or TV-112 •	
L13	Sound Trap	0Ω		37.266	TV-150	
L14	Fil. Choke	0Ω		37.89		
L15	RF Choke	1.8Ω		37.197		
L16	4th. Video IF	.2Ω		37.99	TV-102 or TV-112 •	
L17	Series Peaking Coil	4.8Ω		37.234		120 Microhenries

PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA FADA PART No.	REPLACEMENT DATA MERIT PART No.	NOTES
L18	Shunt Peaking Coil	12Ω		37.235	TV-188	600 Microhenries
L19	Series Peaking Coil	6.5Ω		37.236	TV-184■	190 Microhenries, wound 18KΩ resistor
L20	Shunt Peaking Coil	11Ω		37.237	TV-185	245 Microhenries
L21	Sound IF	2Ω	2Ω	37.252	TV-113	
L22	Ratio Det.	5.5Ω	2Ω CT	37.253 ▲	TV-115	Tertiary Winding - .4Ω
L23	Horiz. Osc.	50Ω		37.233	TV-163	
L24	Horiz. Lin.	5.4Ω		37.244		Tapped @ 1.4Ω
L25	Width Coil	2.3Ω		37.248	MWC-2	

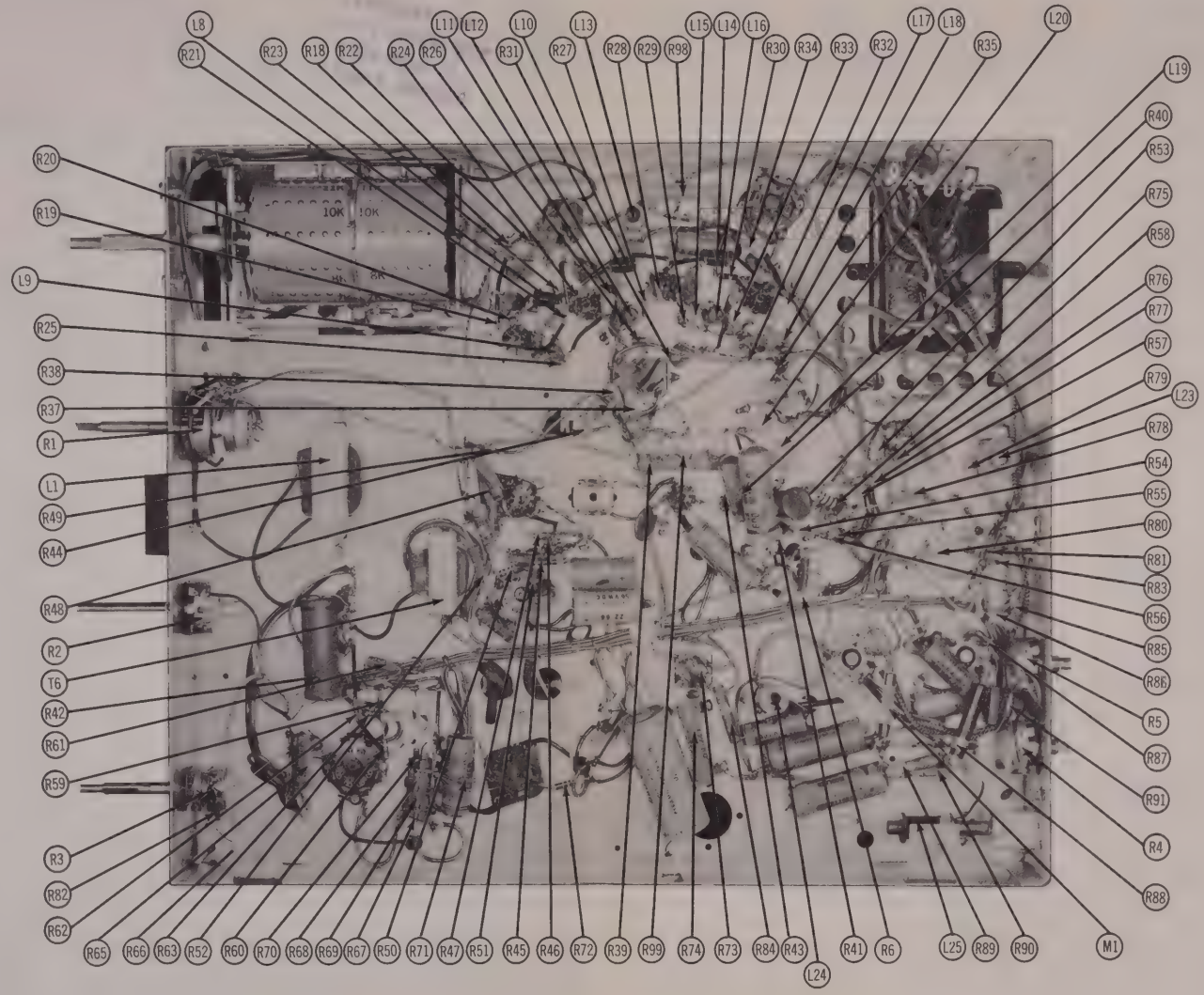
* Enlarge mounting hole.
▲ Alternate part #37.230
■ Parallel with 18KΩ resistor

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA FADA PART No. FUSE	FADA PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M1	3AG (P/T)	1/4A 250V.			318.250 (3AG-1/4A-P/T)		GJV-1/4	

MISCELLANEOUS

ITEM No.	PART NAME	FADA PART No.	NOTES
M2	RF Tuner	42.71	Complete with tubes
M3	Centering Magnet	112.37	Used with Electrostatic Focus Picture Tubes
M4	Focus Magnet	112.26	Used with Electromagnetic Focus Picture Tubes
M5A	Ion Trap	112.39	Used with Electrostatic Focus Picture Tubes
B	Ion Trap	112.23	Used with Electromagnetic Focus Picture Tubes
B2	Trimmer	132.18	Horiz. Drive (25-280MMF)
	Knob	142.91	Channel Selector
	Knob	142.92	Fine Tuning
	Knob	142.93	Off/On Volume & Horiz. Hold
	Knob	142.94	Contrast & Vert. Hold
	Knob	142.95	Brightness
	Cabinet Back	97.479	Model 173T
	Cabinet Back	97.466	Model 175C
	Cabinet Back	97.421	Model 177CD
	Mask	97.478	Model 173T (Specify Color)
	Mask	97.465-1	Model 175C (Specify Color)
	Mask	97.417-2	Model 177CD (Specify Color)
	Safety Glass	92.534	Model 173T
	Safety Glass	92.517	Model 175C
	Safety Glass	92.463	Model 177CD
	Escutcheon	92.381	Model 173T
	Escutcheon	92.504	Models 175C & 177CD
	Name Plate	92.536	Model 173T
	Name Plate	92.375	Models 175C & 177CD
	Cabinet	97.476	Model 173T
	Cabinet	97.453	Model 175C
	Cabinet	97.407	Model 177CD



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

MOTOROLA MODELS 17F13, B, 17K14, A, B, W, 17K15, B, 17K16, 17T11, 17T12, B, W (Ch. TS-395A, TS-395A-02)

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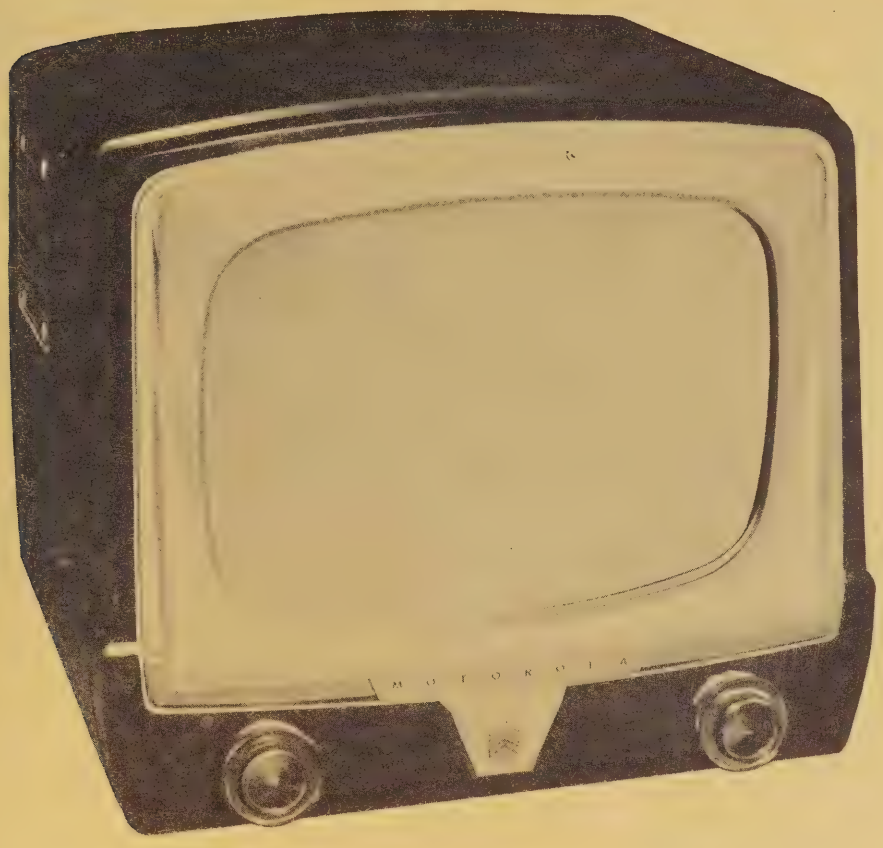

MODEL 17T11

MOTOROLA MODELS 17F13, B, 17K14, A, B, W, 17K15, B, 17K16, 17T11, 17T12, B, W (Ch. TS-395A, TS-395A-02)

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MOTOROLA 17T11

TRADE NAME	Motorola Models 17F13, B, 17K14, A, B, W, 17K15, B, 17K16 (Ch. TS-395A), 17T11 (Ch. TS-395A-02) 17T12, B, W (Ch. TS-395A)
MANUFACTURER	Motorola Inc., 4545 Augusta Blvd., Chicago, Ill.
TYPE SET	Television Receiver
TUBES	Seventeen
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING 1.23 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13, Video IF 26.4MC, Sound IF 21.9MC (Intercarrier)

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MOTOROLA MODELS 17F13, B, 17K14, A, B, W, 17K15, B, 17K16, 17T11, 17T12, B, W (Ch. TS-395A, TS-395A-02)

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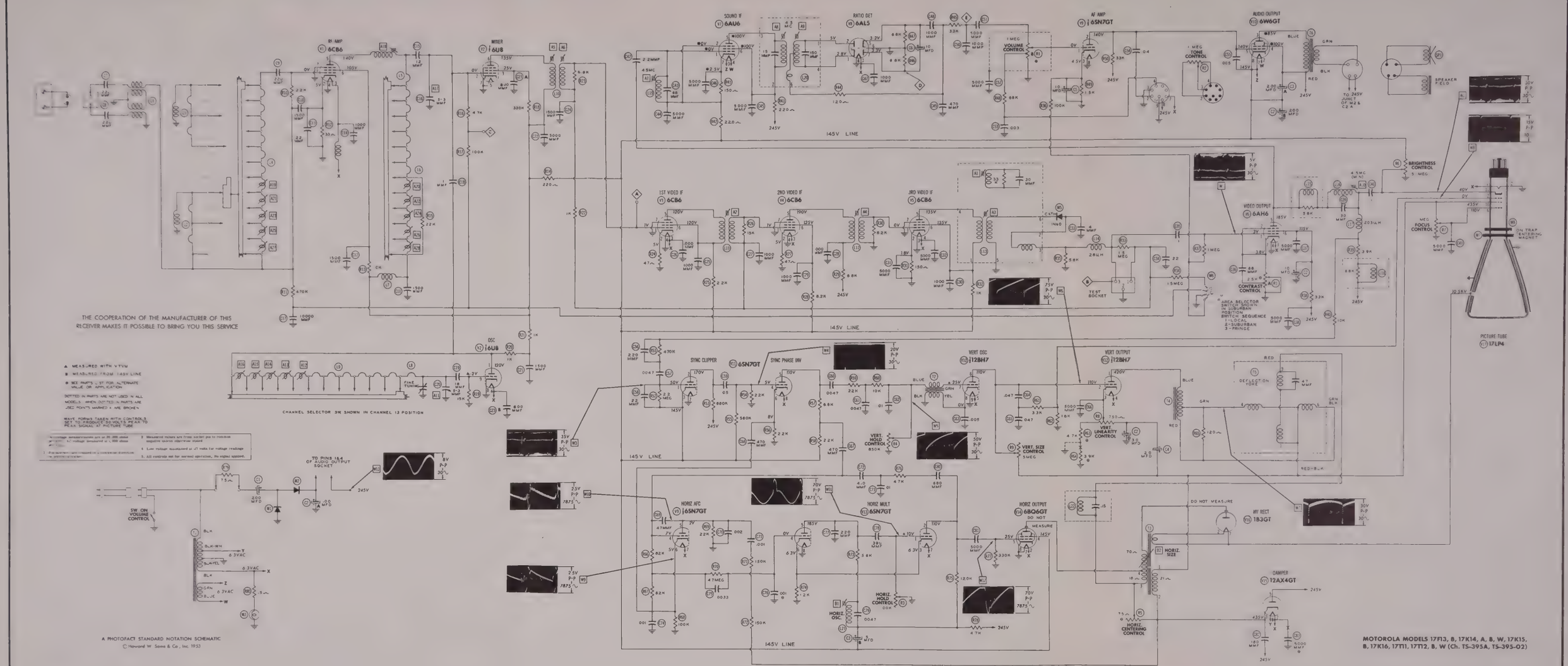
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
A MEASURED WITH VTVM
B MEASURED FROM 145V LINE
D SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN
WAVE FORMS TAKEN WITH CONTROLS SET TO PRODUCE 30 VOLTS PEAK TO PEAK SIGNAL AT PICTURE TUBE
CHANNEL SELECTOR SW SHOWN IN CHANNEL 13 POSITION
TO PINS 1&4 OF AUDIO OUTPUT SOCKET
SW. ON VOLUME CONTROL
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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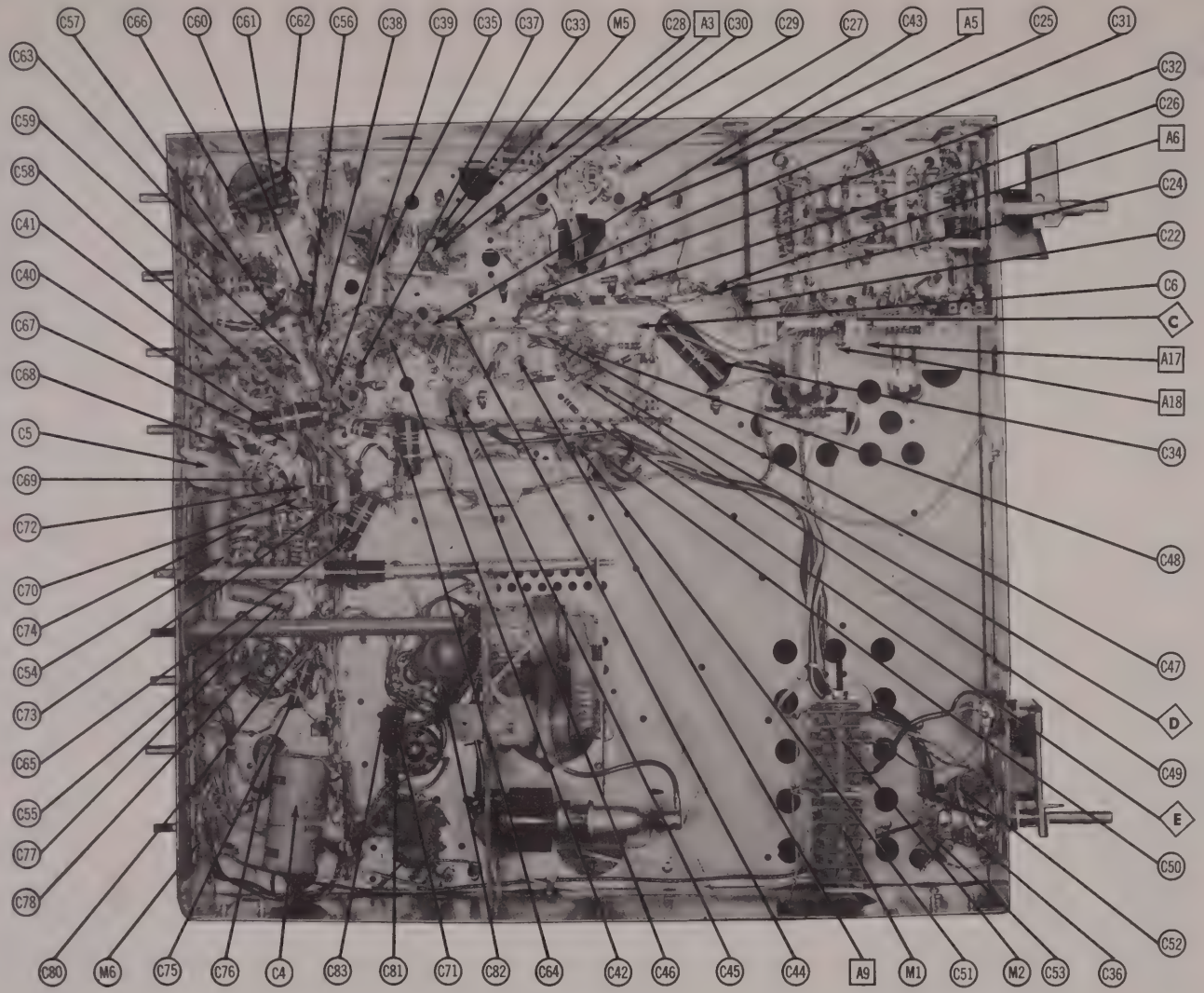
145V LINE
SOUND IF V7 6AU6
RATIO DET V9 6AL5
AF AMP V9 6SN7GT
AUDIO OUTPUT V10 6W6GT
RF AMP V1 6CB6
MIXER V7 6U8
OSC V2 6U8
1ST VIDEO IF V1 6CB6
2ND VIDEO IF V4 6CB6
3RD VIDEO IF V5 6CB6
VIDEO OUTPUT V6 6AH6
SYNC CLIPPER V11 6SN7GT
SYNC PHASE INV
VERT OSC V12 12BH7
VERT OUTPUT V12 12BH7
HORIZ AFC V9 6SN7GT
HORIZ MULT V13 6SN7GT
HORIZ OUTPUT V14 6BQ6GT
DAMPER V11 12AX4GT
HV RECT V13 1B3GT
PICTURE TUBE V17 17LP4
VOLUME CONTROL
TONE CONTROL
BRIGHTNESS CONTROL
FOCUS CONTROL
CONTRAST CONTROL
VERT. HOLD CONTROL
VERT. LINEARITY CONTROL
VERT. SIZE CONTROL
HORIZ. HOLD CONTROL
HORIZ. SIZE
HORIZ. CENTERING CONTROL
DEFLECTION YOKE
ION TRAP ENTERING MAGNET
SPEAKER FIELD
TEST SOCKET
DO NOT MEASURE
MOTOROLA MODELS 17F13, B, 17K14, A, B, W, 17K15, B, 17K16, 17T11, 17T12, B, W (Ch. TS-395A, TS-395-02)

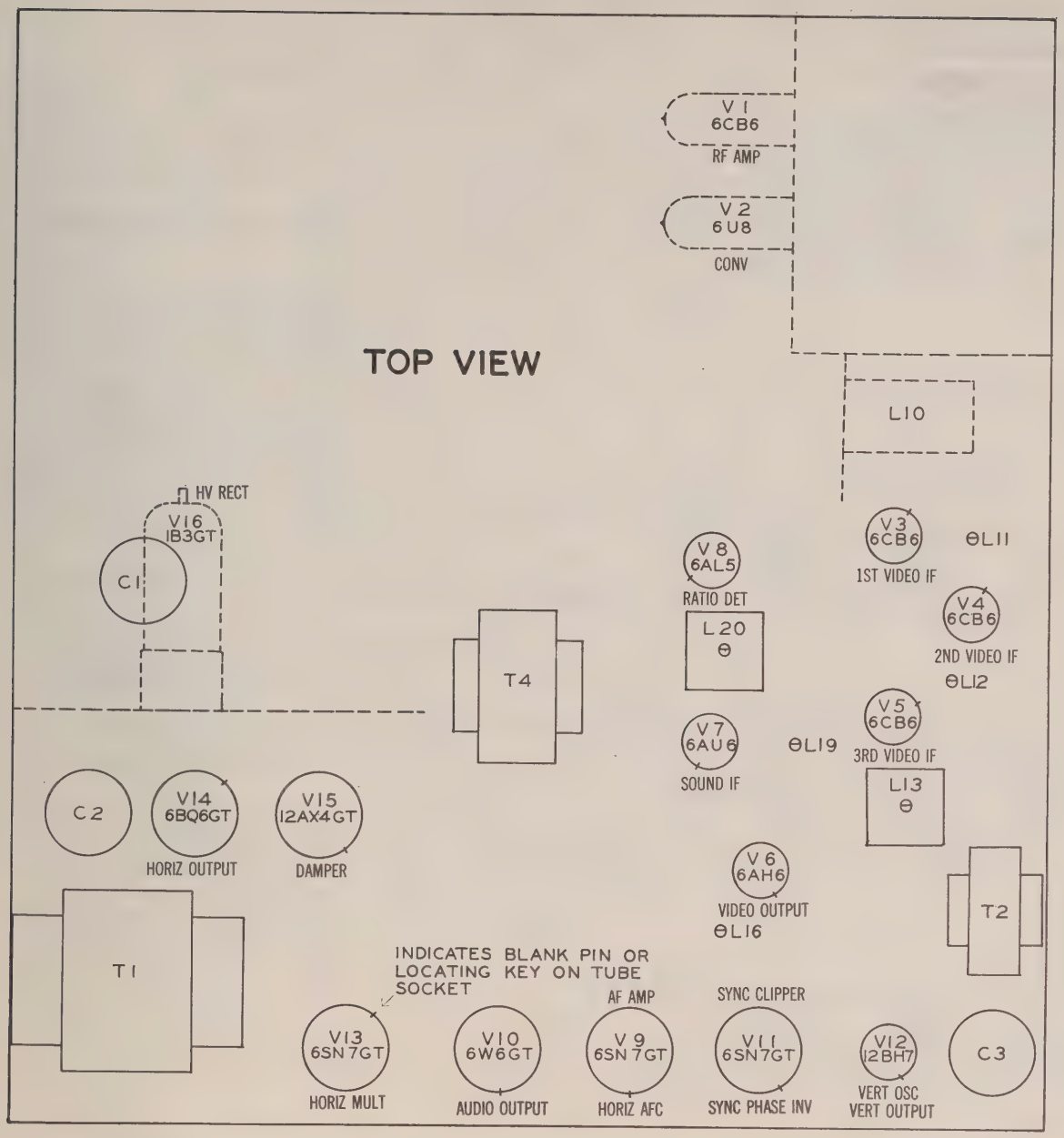
MOTOROLA MODELS 17F13, B, 17K14, A, B, W, 17K15, B, 17K16, 17T11, 17T12, B, W (Ch. TS-395A, TS-395-02)

CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound-Selenium Rectifiers (M1, M2)

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster-V2, V3, V4, V5, V10
No pic, no sound, has snow-V1, V2, V3
No pic, has sound, has raster -V6, V17
Has pic, no sound-V7, V8, V9, V10

SYNC FAILURE
No vert. sync.-V11, V12
No horiz. sync.-V9, V11, V13
No vert. or horiz. sync.-V11

SWEEP FAILURE
No raster, has sound-V13, V14, V15, V16, V17
No vertical deflection-V12
Poor vert. linearity or foldover-V12
Poor horiz. linearity or foldover -V13, V14, V15
Narrow picture-V13, V14, V15, V16, M1, M2
Vert. off freq.-V11, V12
Horiz. off freq.-V 9, V11, V13

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard can be eliminated by removing the horizontal output tube (V14).
The possibility of RF interference from V14 during alignment is also eliminated by this procedure.
Use an isolation transformer to protect the test equipment.

VIDEO IF ALIGNMENT

Connect the negative lead of a 3 volt battery through 47KΩ to pin 1 of the test receptacle on top left of chassis. Connect the negative lead to chassis.
Turn Area Selector Switch to Local.
If a distorted or unstable response curve is seen on scope during alignment it may be necessary to disable the local oscillator by shorting across the oscillator inductance (position 2 to position 13 on the band switch).
If two resonance points are found while adjusting the IF cores or traps, use the one with the core near outer end of coil winding.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	.001MFD	High side to point (A). Low side to chassis.	24.6MC (10MC Swp)	21.9MC	Any non-interfering channel	Vert. Amp. thru 47KΩ to point (B). Low side to chassis.	A1	Adjust for MINIMUM response at 21.9MC.
2.	"	"	"	26.6MC	"	"	A2, A3	Adjust A2 to place 26.6MC marker 50% down on high frequency side of response curve. Adjust A3 for a flat-top or symmetrical response curve similar to Fig. 1.
3.	"	"	"	22.9MC	"	"	A4, A3	Adjust A4 to place 22.9MC marker 50% down on low frequency side of response curve. Adjust A3 for a flat-top or symmetrical response curve similar to Fig.1.
4.	"	High side to point (C). Low side to chassis.	"	22.9MC 26.4MC	"	"	A5, A6	Short across R16. Adjust for response similar to Fig. 2.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Set the contrast control for maximum gain (fully clockwise).

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
5.	.005MFD	High side to pin 1 (grid) of 6AH6 (V6). Low side to chassis.	4.5MC (Unmod.)	Any non-interfering channel	DC probe to point (D). Common to chassis.	A7, A8	Adjust for maximum deflection.
6.	"	"	"	"	DC probe to point (E). Common to chassis.	A9	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Set contrast control for maximum gain (fully clockwise).
Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	.005MFD	High side to pin 1 (grid) of 6AH6 (V6). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any non-interfering channel.	Vert. amp to point (D) Low side to chassis.	A7, A8	Disconnect stabilizer capacitor C6. Adjust for curve of maximum amplitude and symmetry as in fig. 3.
6.	"	"	"	"	"	Vert. amp to point (E) Low side to chassis.	A9	Reconnect capacitor C6. Adjust so that 4.5MC occurs at center of crossover lines as in fig. 4. SLIGHTLY retouch A8 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ALIGNMENT

Set contrast control for maximum gain.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
7.	.005MFD	High side to pin 1 (grid) of 6AH6 (V6). Low side to chassis.	4.5MC (Unmod.)	Any non-interfering channel	DC probe thru detector (fig.5) to pin 11 of picture tube. Common to chassis.	A10	Adjust for MINIMUM deflection.

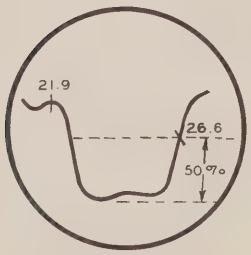


FIG. 1

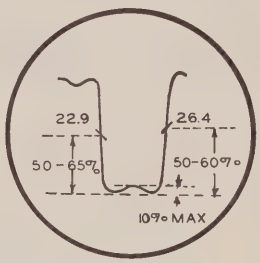


FIG. 2

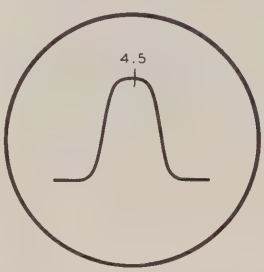


FIG. 3

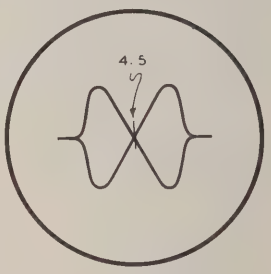


FIG. 4

ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT

Remove the oscillator short, if used previously.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	195MC (10MC Swp)	197.75MC	10	Vert. amp thru 47KΩ to point (B). Low side to chassis.	A11	Adjust to place the sound marker slightly higher in frequency than the 21.9MC trap dip. This is necessary to compensate for the frequency shift caused by removal of the tuner cover.
9.	"	"	213MC (10MC Swp)	215.75MC	13	"		Check all high band channels to see if marker can be properly places within 30 degrees rotation from mid position of the tuning control. If not, adjust L8 by compressing or expanding the coil turns. If L8 is adjusted it may be necessary to readjust A11 on channel 10.
			207MC (10MC Swp)	209.75MC	12			
			201MC (10MC Swp)	203.75MC	11			
			189MC (10MC Swp)	191.75MC	9			
			183MC (10MC Swp)	185.75MC	8			
			177MC (10MC Swp)	179.75MC	7			
10.	"	"	85MC (10MC Swp)	87.75MC	6	"	A12	Set the fine tuning trimmer 15 degrees off mid-capacity position (toward more capacity) compress or expand A13 to place sound marker as in step 8.
11.	"	"	79MC (10MC Swp)	81.75MC	5	"	A13	Adjust to place sound marker as in step 8.
			69MC (10MC Swp)	71.75MC	4		A14	
			57MC (10MC Swp)	59.75MC	3		A15	
			53MC (10MC Swp)	55.75MC	2		A16	

ANTENNA AND RF ALIGNMENT

Turn Area Selector switch to SUBURBAN.
Stop the local oscillator by shorting from position 2 to position 13 on the band switch.
The antenna coils are tuned to the video carrier side and the RF coils are tuned to the sound carrier side.
Preset A18 midway in the coil.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	177MC (10MC Swp)	175.25MC 179.75MC	7	Vert. Amp. thru 47KΩ to point (C). Low side to chassis.	A17	Adjust to place markers within the limits of Fig. 6.
13.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"	A18	Adjust to place markers within the limits of Fig. 6. Recheck channel 7 and retouch A17 if necessary.
14.	Check channels 13 thru 7 for response similar to fig. 6. The peak of the curve may be sharpened or broadened by adjusting the position of the grounded end of L3. Normal position is approximately 3/16" from the switch shield.							
15.	"	"	85MC (10MC Swp)	83.25MC 87.75MC	6	"	A19, A20	Compress or expand for response within limits of Fig. 7.
16.	"	"	79MC (10MC Swp)	77.25MC 81.75MC	5	"	A21, A22	"
17.	"	"	69MC (10MC Swp)	67.25MC 71.75MC	4	"	A23, A24	"
18.	"	"	63MC (10MC Swp)	61.25MC 65.75MC	3	"	A25, A26	"
19.	"	"	57MC (10MC Swp)	55.25MC 59.75MC	2	"	A27, A28	"

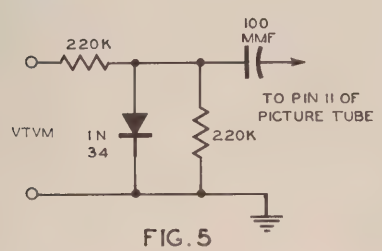


FIG. 5

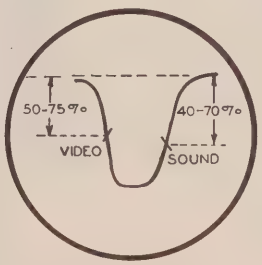


FIG. 6

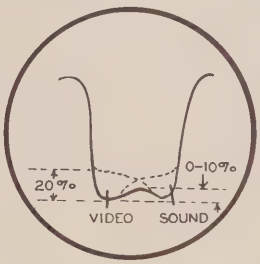
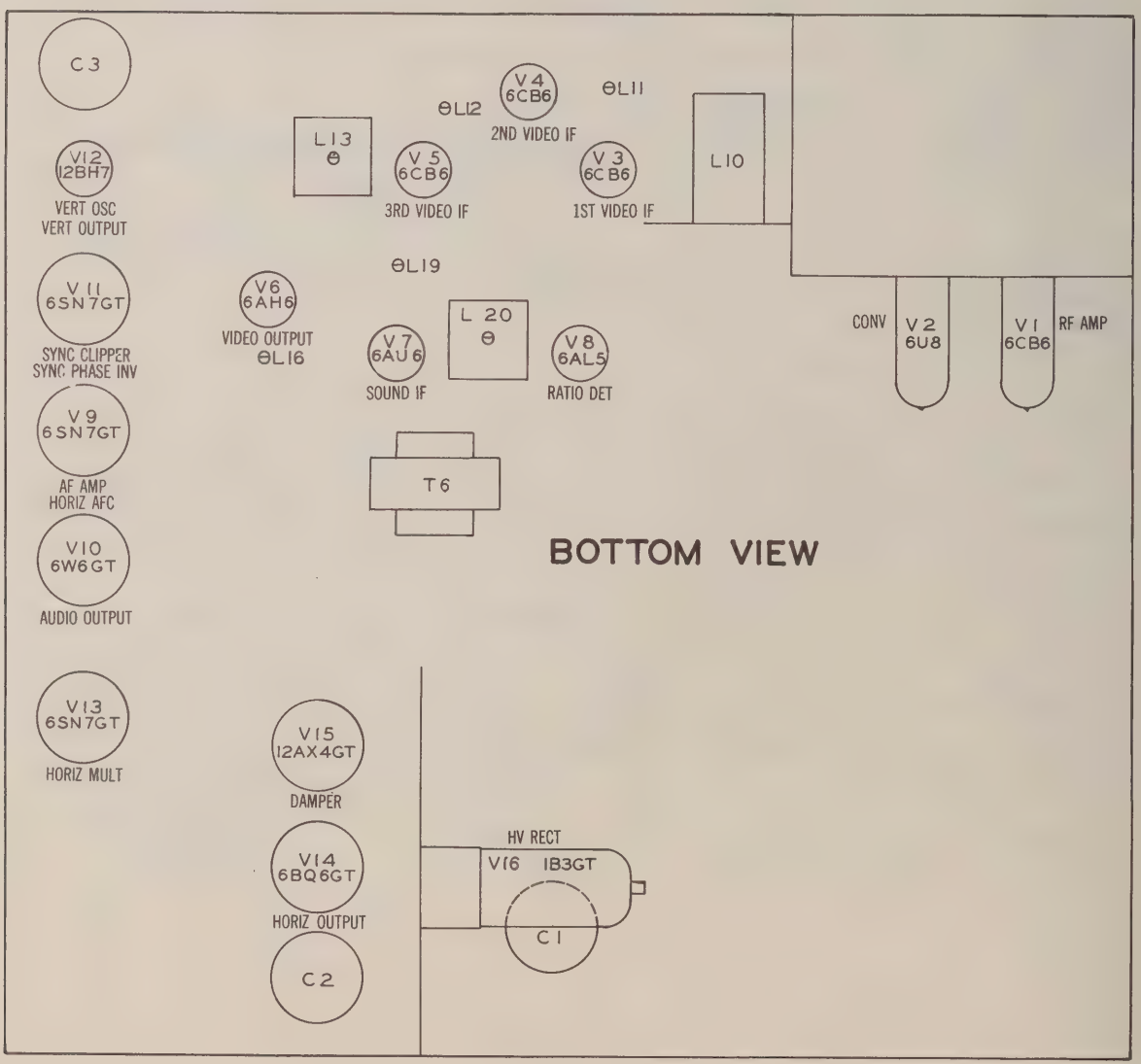


FIG. 7

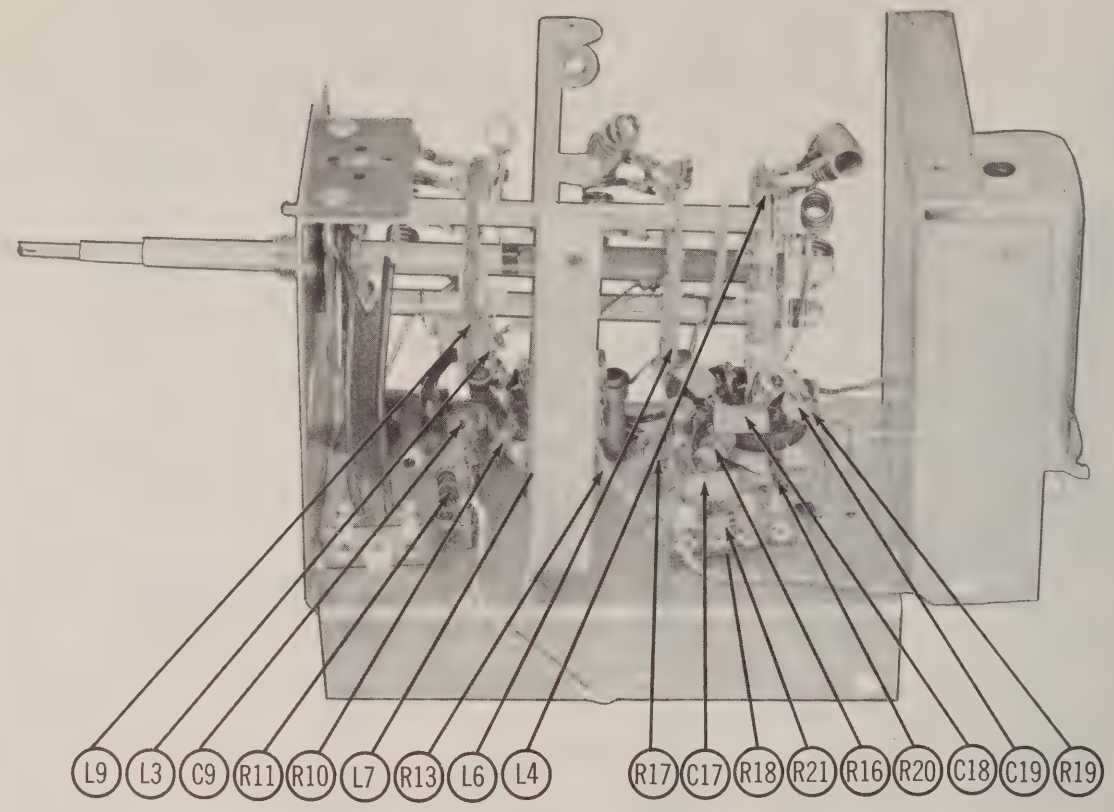
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	3.5Meg	33Ω	.1Ω	0Ω	#220Ω	#10KΩ ≀	0Ω		
V 2	6U8	#2.2KΩ	3.1Meg	#330KΩ	.1Ω	0Ω	#220Ω	0Ω	0Ω	15KΩ
V 3	6CB6	1.5Meg	47Ω	.1Ω	0Ω	#2.2KΩ	#2.2KΩ	0Ω		
V 4	6CB6	1.5Meg	47Ω	.1Ω	0Ω	†6.9KΩ	#8.2KΩ	0Ω		
V 5	6CB6	.4Ω	150Ω	0Ω	.1Ω	#1KΩ	#1KΩ	0Ω		
V 6	6AH6	1.1Meg	180Ω	.1Ω	0Ω	†4KΩ	†33KΩ	180Ω		
V 7	6AU6	#220Ω	#220Ω	#0Ω ≀	#.1Ω	†300Ω	†300Ω	#370Ω		
V 8	6AL5	INF	INF	.1Ω	0Ω	6.8KΩ	0Ω	6.8KΩ		
V 9	6SN7GT	140KΩ	†33KΩ	1.5KΩ	264KΩ	22KΩ	100KΩ	.1Ω	0Ω	
V 10	6W6GT	40KΩ	#.1Ω	†285Ω	†85Ω	†33KΩ	182KΩ	#0Ω	190KΩ	
V 11	6SN7GT	#2.2Meg	†680KΩ	#0Ω	21KΩ	#9KΩ	2.2KΩ	0Ω	.1Ω	
V 12	12BH7	■746Ω	■2.6Meg	8.6KΩ	.1Ω	.1Ω	■2.6Meg	540KΩ	50Ω	0Ω
V 13	6SN7GT	100KΩ	†125KΩ	1.2KΩ	4.9Meg	†10KΩ ≀	1.2KΩ	.1Ω	0Ω	
V 14	6BQ6GT	INF	.1Ω	†125KΩ	#0Ω	330KΩ	21KΩ	0Ω	0Ω	Top Cap ■31Ω
V 15	12AX4GT	INF	■13Ω	850KΩ	INF	†85Ω	■300KΩ	.1Ω	.1Ω	
V 16	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								Top Cap ■201Ω
V 17	17LP4	.1Ω	1.8KΩ	Pin 6 200KΩ	Pin 10 ■16Ω	Pin 11 520KΩ	Pin 12 0Ω			

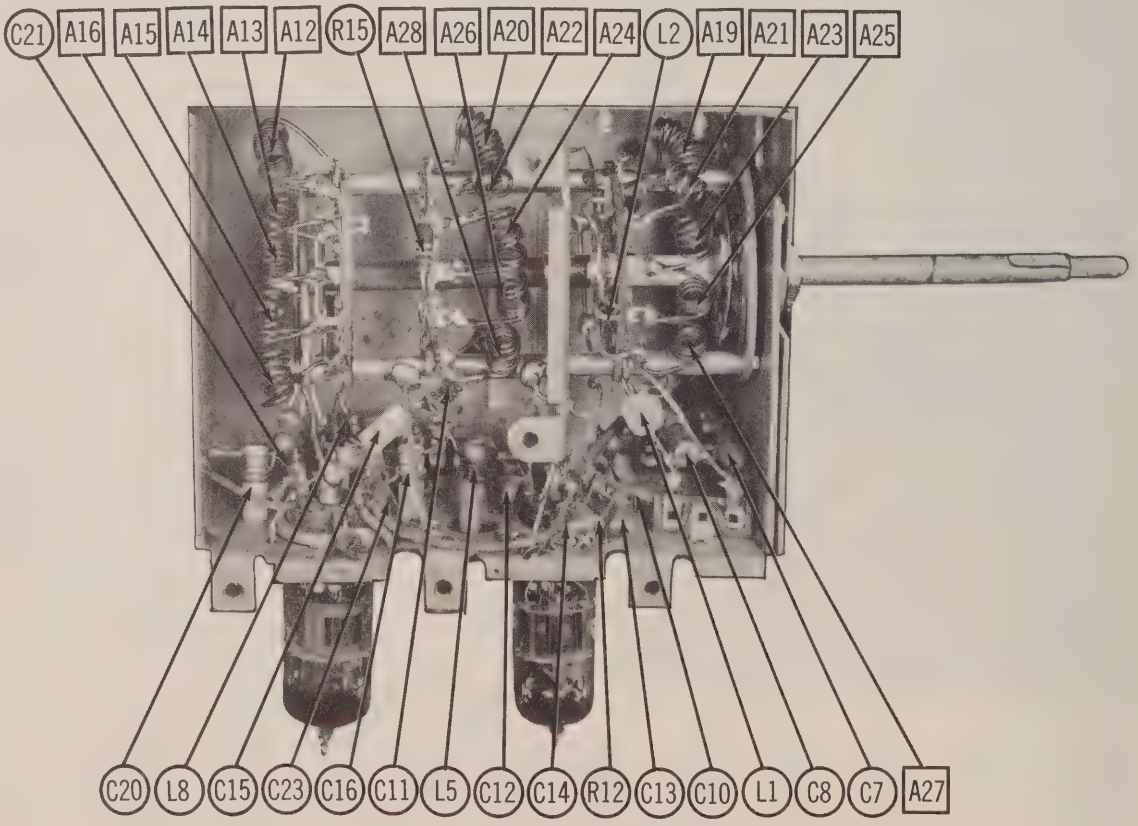
ALL MEASUREMENTS TAKEN WITH "AREA SELECTOR SWITCH" IN "LOCAL" POSITION
† MEASURED FROM OUTPUT OF M2
# MEASURED FROM 145 VDC LINE (PIN 8 , V10)
■ MEASURED FROM PIN 3 OF V15



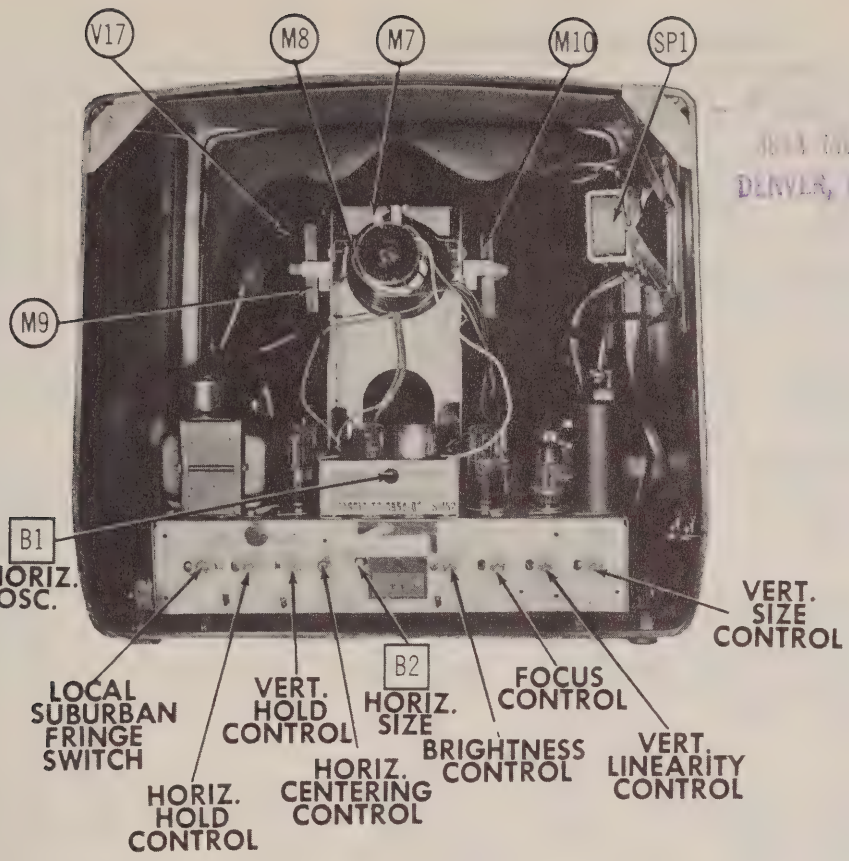
TUBE PLACEMENT CHART



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Normally the horizontal hold control will have a sync range of approximately 70 degrees. If the control is too critical adjust as follows.

1. Short out the horizontal oscillator coil to chassis with a .25MFD, 400 volt capacitor. This may be done by connecting the capacitor across the 2 pin socket at rear of chassis.
2. With the horizontal centering control move the picture to the left so that the right hand edge of the raster is visible. The blanking pulse appears as a dark vertical bar at right of raster. Adjust the horizontal hold control until approximately 1/16" of sync pulse is visible as a darker bar to the right of the blanking pulse.
3. Remove the .25MFD capacitor from across the oscillator coil.
4. Adjust the horizontal oscillator slug (B1) for the same amount of sync pulse as was seen in step 2. Readjust the horizontal centering to normal.

Adjust the horizontal size (B2) for a picture slightly wider than necessary to fill the picture mask horizontally. As this control also affects the vertical size it may be necessary to adjust the vertical size control.

RASTER CORRECTOR MAGNETS

Reduce the raster size so that the four corners are visible. If necessary, the position of the corrector magnets may be varied until the corners are right angles and the opposite sides of the raster are parallel.

DISASSEMBLY INSTRUCTIONS

1. Remove 5 push on type control knobs from front panel.
2. Disconnect built-in antenna.
3. Remove 2 screws . Remove antenna bracket. from rear cover.
4. Remove 3 metal screws. Remove rear cover.
5. Disconnect speaker. Remove 4 speaker nuts. Remove speaker.
6. Remove 4 chassis bolts. Remove chassis.

NOTE: FOR PICTURE TUBE REMOVAL & CLEANING IT WILL BE NECESSARY TO REMOVE CHASSIS AS OUTLINED ABOVE.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No	USE	REPLACEMENT DATA: MOTOROLA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	6CB6	6CB6	7CM	
V2	Converter	6U8	6U8	9AK	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd. Video IF Amp	6CB6	6CB6	7CM	
V5	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V6	Video Output	6AB6	6AB6	7BK	
V7	Sound IF Amp.	6AU6	6AU6	7BK	
V8	Ratio Detector	6AL5	6AL5	6BT	
V9	AF Amplifier-Horiz. AFC	6SN7GT	6SN7GT	8BD	
V10	Audio Output	6W6GT	6W6GT	7S	
V11	Sync Clipper-Sync Phase Inv.	6SN7GT	6SN7GT	8BD	
V12	Vert. Oscillator-Vert. Output	12BH7	12BH7	9A	
V13	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V14	Horiz. Output	6BQ6GT	6BQ6GT	5AM	
V15	Damper	12AX4GT	12AX4GT	6CG	
V16	HV Rectifier	1B3GT	1B3GT	3C	

CATHODE-RAY TUBE

ITEM No	REPLACEMENT DATA: MOTOROLA PART No	REPLACEMENT DATA: SYLVANIA PART No	RTMA BASE TYPE	NOTES
V17		17LP4 17YP4	12C 12L	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No	RATING: CAP	RATING: VOLT	MOTOROLA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1	200	450	23B702779	E4D257		XB006		FP216.1	TVL-1431	
C2A	4.100	300	23B712988	E4D49R		D109		FP449.4	TVL-4581	
B	4.200	150								
C	20	300								
D	30	150								
C3A	4.200	150	23B710941	E4D357		XB006		FP216.1	TVL-3444	
B	45	180				BR415				
C4	30	450	23K710687	PRS450/30		BR2045A		TC75	TVA-4709	
C5	10	50	23A90205	PRS50/10		BR105		TC32	TVA-1304	
C6	10	50	23A90205	PRS50/10		BR105		TC32	TVA-1304	
C7	220		21R115905	S1220	D6-221		GP2K-221	UC-5322	5GA-T22	
C8	220		21R115905	S1220	D6-221		GP2K-221	UC-5322	5GA-T22	
C9	220		21R400941	S1220	D6-221		GP2K-221	UC-5322	5GA-T22	
C10	1500		21A701029	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C11	1500		21A701029	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C12	1500		21A701029	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C13	22		21R400942	SI22	D6-220		GP1K-220	UC-5422	5GA-Q22	
C14	1000		21R400936	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C15	12		21R114073				NP30E-120			
C16	.5-3		1V710954		829-3				CTS65A	
C17	18000		21R482726	BPD-01	DD-103	TM5D1	821-01	DC-511	5HK-S1	
C18	15		21R114071		TCE-1		NP01E-010			
C19	18		21R115840				N150E-180			
C20	.5-3		1V710954		829-3				CTS65A	
C21	1500		21A701029	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C22	1000		21R115312	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C23A	600		21R400937	BPD-0008	DD-801	TM5T8	812-001	DCD-521	5HK-ED1	
B	800									
C24	1500		21A701029	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C25	1000		21R400938	BPD-001	DD-103	TM5D1	801-001	DC-521	5HK-D1	
C26	1000		21R400938	BPD-001	DD-103	TM5D1	801-001	DC-521	5HK-D1	
C27	1000		21R400936	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C28	1000		21R400936	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C29	1000		21R400936	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C30	1000		21R400936	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C31	5000		21R115312	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C32	5000		21R115312	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C33	4		2JK38951				NP0K-040			
C34	.22	400	8R9810	P488-22		PTE4P22		PT401	4TM-P22	
C35	.1	100	8R9814	P288-1	DF-104	PTE4P1		PT401	2TM-P1	
C36	68		21R115897				N470L-680		DC-525	5HK-D5
C37	5000		21R115312	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C38	5000		21R115312	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C39	30		21R470329				N150K-300			
C40	.1	400	8R490236	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C41	5000		21R115312	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C42	2.2		21A178274		TCZ-2.2		NP0K-2R2		5TCCB-V22	
C43	68		21R400928				N470L-680			
C44	5000		21R115312	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C45	5000		21R115312	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C46	5000		21R115312	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C47	1000		21R400936	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C48	1000		21R400936	S11000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C49	470		21R400940	S1470	D6-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C50	1000		21R400936	S11000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C51	5000		21R115312	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C52	5000		21R115312	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C53	.005	200	8R9820	P488-05	DF-502	PTE5D3	GP2-333-502	PT833	5TM-D3	
C54	04	600	8K400028	P688-04		PTE6S4		PT614	6TM-S4	
C55	.005	600	8R9859	P688-005	DF-503	PTE6D5	GP2-333-502	PT825	6TM-D5	
C56	220		21R115905	S1220	D6-221	TM5T25	GP2K-221	UC-5322	5GA-T22	
C57	.0047	400	8R490222	P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C58	22		21R400942	SI22	D6-220	5W5Q25	GP1K-220	UC-5422	5GA-Q22	
C59	.05	400	8R490232	P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C60	.0047	400	8R490222	P688-0047	D6-472	PTE5D47	GP2-333-472	PT6247	6TM-D47	
C61	.0047	600	8R490222	P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C62	.01	400	8R490236	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C63	.005	600	8R9859	P688-005	D6-503	PTE6D5	GP2-333-502	PT625	6TM-D5	
C64	.047	400	8R490232	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C65	.047	400	8R490232	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C66	5000		21R115312	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	

CAPACITORS (CONT.)

ITEM No	RATING: CAP.	RATING: VOLT	MOTOROLA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	ERIE PART No	MALLORY PART No.	SPRAGUE PART No	NOTES
C67	470	500	21R8873	1468-0005	D6-471	5W5T5	GP2K-471	MC245	1PM-35	
C68	470	500	21R8873	1468-0005	D6-471	5W5T5	GP2K-471	MC245	1PM-35	
C69	47		21R114307	S1470T150	TCN-47		N750K-470	WT-5447	5TCU-C47	
C70	.002	600	8R9867	P688-002	D6-202	PTE6D2	GP2-333-202	PT622	6TM-D2	
C71	.001	1000	8R9868	P1068-001		PTE10D1		PT10D1	MB-D1	
C72	470	500	21R8873	1468-0005	D6-471	5W5T5	GP2K-471	MC245	1PM-35	
C73	100	400	8R9858	P488-01	D6-101	PTE4S1	GP2-333-103	PT411	4TM-S1	
C74	.001	600	8R9866	P688-001	D6-102	PTE6D1	GP2-333-103	PT621	6TM-D1	
C75	.0033	400	8R9868	P488-0033	D6-332	PTE4D33	GP2-333-332	PT6233	6TM-D33	
C76	.001	600		P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	Note 1
C77	220		21R115905	SI220	D6-221	5R5T25	GP2K-221	UC-5322	5GA-T22	
C78	390	500	21R117440	1468-0004		5R5T4		MCB243	MB-34	
C79	.0047	400	21R490222	1464-004		1DR5D5		MC3403	MB-25	
C80	680	500	21R114781	1479-0007		2R5T7			MB-37	
C81	5000		21R115312	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C82	180	3000	21K701873							
C83	5000		21R115312	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	Note 2

Note 1. Some Models use .01MFD in this application (Part #8R9858)
Note 3. Not used in all Models.

CONTROLS

ITEM No	RATING: RESISTANCE	RATING: WATTS	MOTOROLA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	2500Ω	½	16B720263	QJ-360*				Contrast Tap ⑥ 1700Ω-Panel - Note 1
B	1 Meg	½						Volume & Switch Tap ⑥ 280KΩ Rear
R2A	1 Meg	½	18A711999	QII-137	AG-61-8		U-54	Tone
B	Shaft		Not Req.	PQ	RS-2		Not Req.	Attach to R2A
R3A	100KΩ	½	18A720195	QII-125	AG-49-8	B-40	U-41	Horiz. hold Note 2.
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R3A
R4A	850KΩ	½	18K711278	QII-133			U-50	Vert. hold-Note 3
B	Shaft		Not Req.	Not Req.			Not Req.	Attach to R4A
R5	75Ω	1	1V721286					Horiz. centering-Wire Wound Note 6
R6A	5.1Meg	½	18A702441		AG-85-8		U-85	Brightness-Note 4
B	Shaft		Not Req.		RS-2		Not Req.	Attach to R6A
R7A	1 Meg	½	18A711225	QII-137	AG-61-8	AB-89	U-54	Focus
B	Shaft		Not Req.	Not Req.	RS-2	AK-1	Not Req.	Attach to R7A
R8A	750Ω	½	18A702475	QII-105	AG-6-8			Vert. linearity
B	Shaft		Not Req.	Not Req.	RS-2			Attach to R8A
R9A	5 Meg	½	18A702443	QII-141	AG-85-8	AB-87	U-87	Vert. size -Note 5
B	Shaft		Not Req.	Not Req.	RS-2	AK-4	Not Req.	Attach to R9A

* CONTRINKIT EQUIVALENT-KIT K-4, BASE ELEMENTS & SHAFTS L27-111X4 P1-224 (Panel)
B13-137X & R4-306 (Rear) & SWITCH 76-1.

Note 1. Some models use alternate control (Part No. 18K702864)
Note 2. Connect a 39KΩ resistor in series with clockwise terminal & pin 1, V13. This control is used with push-on type knobs. For those receivers employing set-screw type knobs this control is part. No. 18A702468.
Note 3. Connect a 330KΩ resistor in series with clockwise terminal & ground, This control is used with set-screw type knobs. For those receiver employing Push-on type knobs this control is part No. 18A720196.
Note 4. Connect a 100KΩ resistor in series with clockwise terminal & ground.
Note 5. Connect a 1 Meg resistor in series with clockwise terminal & ground.
Note 6. Some models use a 50Ω control in this application.

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: MOTOROLA PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R10	22KΩ	½	6R6397	BTS-470K	
R11	470KΩ	½	6R6032		
R12	33Ω	½	6R2036		
R13	10KΩ	½	6R6054	BTS-10K	
R14	220Ω	½	6R3933	BTS-220	
R15	22KΩ	½	6R6397		
R16	4700Ω	½	6R6039	BTS-4700	
R17	100KΩ	½	6R6075	BTS-100K	
R18	330KΩ	½	6R6014		
R19	15KΩ	½	6R2119	BTS-15K	
R20	1000Ω	½	6R6301	BTS-1000	
R21	1000Ω	½	6R6301	BTS-1000	
R22	1000Ω	½	6R6301	BTS-1000	
R23	6800Ω	½	6R6428		
R24	47Ω	1	6R5550		
R25	2200Ω	1	6R6409	BTA-2200	
R26	15KΩ	½	6R6477		
R27	47Ω	1	6R5550		Note 1
R28	82000Ω	½	6R2004	BTS-8200	Note 2
R29	6800Ω	½	6R6034		
R30	8200Ω	½	6R2004	BTS-8200	
R31	150Ω	½	6R6373	BTS-150	
R32	1000Ω	½	6R6301	BTS-1000	
R33	1.5Meg	½	6R6460	BTS-1.5Meg	
R34	1.5Meg	½	6R6460	BTS-1.5Meg	
R35	5600Ω	½	6R617	BTS-5600	
R36	100KΩ	½	6R6075	BTS-100K	
R37	1 Meg	½	6R6046	BTS-1 Meg	
R38	33KΩ	1	6R6400	BTA-33K	
R39	3900Ω	2	6R476012	BTB-3900	
R40	10KΩ	½	6R6054	BTS-10K	
R41	150Ω	½	6R3992	BTS-150	
R42	220Ω	½	6R3933	BTS-220	
R43	220Ω	½	6R3933	BTS-220	
R44	120Ω	½	6R5551	BTS-120	
R45	33KΩ	½	6R6012	BTS-33K	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: MOTOROLA PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R46	6800Ω	½	6R6428	BTS-6800	
R47	6800Ω	½	6R6428	BTS-6800	
R48	68KΩ	½	6R6001	BTS-68K	
R49	150KΩ	½	6R6038	BTS-150K	
R50	33KΩ	1	6R401012	BTA-33K	
R51	470KΩ	½	6R6032	BTS-470K	
R52	2.2Meg	½	6R3927	BTS-2.2Meg	
R53	680KΩ	½	6R6475	BTS-680K	
R54	22KΩ	½	6R6028	BTS-22K	
R55	560KΩ	½	6R5997	BTS-560K	
R56	2200Ω	½	6R6059	BTS-2200	
R57	6800Ω	½	6R6428	BTS-6800	
R58	8200Ω	½	6R6069	BTS-8200	
R59	22KΩ	½	6R6028	BTS-22K	
R60	10KΩ	½	6R6054	BTS-10K	
R61	3300Ω	½	6R5581	BTS-3300	
R62	1800Ω	½	6R2089	BTS-1800	
R63	4700Ω	2		BTB-4700	Note 1
R64	3900Ω	2		BTB-3900	Note 2
R65	120Ω	½	6R5551	BTS-120	
R66	82KΩ	½	6R5644	BTS-82K	
R67	82KΩ	½	6R5644	BTS-82K	
R68	100KΩ	½	6R6031	BTS-100K	
R69	22KΩ	½	6R6397	BTS-22K	
R70	4.7Meg	½	6R2122	BTS-4.7Meg	
R71	150KΩ	1	6R410053	BTA-150K	
R72	150KΩ	½	6R410053	BTA-150K	
R73	5600Ω	½	6R617	BTS-5600	
R74	1200Ω	½	6R6393	BTS-1200	
R75	120KΩ	½	6R5631	BTS-120K	
R76	4700Ω	½		BTS-4700	
R77	330KΩ	½	6R2096	BTS-330K	
R78	4700Ω	½		BTS-4700	
R79	7.5Ω	5	1K711027		
R80	15Ω	½	6R2034		

Note 1. Some models use a 8700Ω (3 Watt)resistor in this application. (Part No. 17K710960)
Note 2. Not used in all models.

TRANSFORMER (FILAMENT)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: MOTOROLA PART No	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No	REPLACEMENT DATA: CHICAGO PART No	REPLACEMENT DATA: TRIAD PART No
T1	117VAC	2.5VAC @ .75 Amps	6.3VAC @ 1.6 Amp	6.3VAC @ 2.8 amps	25K712297				

* Auto Transformer windings.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: MOTOROLA PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No	REPLACEMENT DATA: CHICAGO PART No	REPLACEMENT DATA: TRIAD PART No	NOTES
T2	50Ω	220Ω	25K702429K 25K702429A ① 25K710730 ①	A-8125	A-3000 ②	TBC-2 ④	A-97Y	Vert. Osc. Trans.
T3	168Ω tap @ 18Ω	21Ω SEC. 2 0Ω	24C721290					Horiz. Output Trans.
T4	730Ω tap @ 1Ω		25B702455 25K721027 ①	A-8140 ⑤	A-3081 ②	TSO-6 ④ ⑤	A-103X ④ ⑤	Vert. Output Trans.
T5A	35Ω	2.3Ω	24K720155	DY-10 ⑥	MDF-30 ⑥	TY-4 ⑥	Y-20 ⑥	Horiz. Deflection Coils Vert. Deflection Coils

① Alternate Vert. Osc. Trans.
② Drill one new mounting hole.
③ Alternate Vert. Output Trans.
④ Drill new mounting holes
⑤ Connect as auto trans.
⑥ Use original deflection network

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: MOTOROLA PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: TRIAD PART No.	NOTES
T6	2.45KΩ	3.3Ω	199Ω	.38Ω	25B710925 25K720128 ①	A-3876	A-2928	RO-2	S-1X	① Alternate Audio Output

SPEAKER

ITEM No.	RATINGS: SIZE	RATINGS: FIELD	RATINGS: V. C. IMP.	REPLACEMENT DATA: MOTOROLA PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA: QUAM PART No.	NOTES
SP1	6"	85Ω	3.3Ω	50C489002 50C711976 ① 50C711081 ② 50C701615 ③ 50C721487 ④ 50C700850 ⑤ 50C703098 ③ 50C720156 ③ 50C703337 ③ 50C721294 ④ 50C701328 ④ 50C701834 ④ 50C703099 ④ 50C703057 ④ 50C702550 ④ 25B701075 ⑥		6X85S	① Alternate 6" EM speakers ② 6 x 9" EM speakers ③ 8" EM speakers ④ 10" PM speakers ⑤ Filter choke used with 10" speakers

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: MOTOROLA PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
L1	Ant. Impedance Matching Coil	0Ω		24A790033			Tapped
L2	Ant. Shunt Coils	0Ω		24K703079			Channels 2-6
L3	Ant. Shunt Coils	0Ω		24K703078			Channels 7-13
L4	Ant. Coils	0Ω		24K703003			Channels 2-7
L5	RF Coil	0Ω		24C703076			Channel 13
L6	RF Coils	0Ω		24K703002			Channels 2-7
L7	RF Choke	3Ω		24K792577			3.3 Microhenries
L8	Osc. Coil	0Ω		24K703077			Channel 13
L9	Osc. Coils	0Ω		24C703001			Channels 2-7
L10	1st. Video IF	.4Ω	.3Ω	24B702983	TV-100 †		
L11	2nd. Video IF	.4Ω	.4Ω	1V712105			
L12	3rd. Video IF	.4Ω	.4Ω	1V712106			
L13	4th. Video IF	.4Ω	.4Ω	24K712104		CLA	Includes trap, also includes Series Peaking Coil & 33KΩ resistor
L14	Series Peaking Coil	2.8Ω		24B711413	TV-180		28 Microhenries
L15	Series Peaking Coil	12Ω		24K712101 *	TV-185 ▪		Wound on 5.6KΩ resistor
L16	4.5MC Trap	3.2Ω		1V792736	TV-151		
L17	Shunt Peaking Coil	9.5Ω		24K710140 ●	TV-184		203 Microhenries
L18	Shunt Peaking Coil	15Ω		24K712102 ▲	TV-188 ●		Wound on 6.8KΩ resistor
L19	Sound IF	1Ω		1V790345	TV-151		
L20	Ratio Det.	2.8Ω	.31CT	24B702543	TV-110		Tertiary Winding - .25Ω
L21	Horiz. Osc.	40Ω		24K701558	TV-183		
L22	Horiz. Lin.	13.5Ω		24A710751			Wound on .15MMF capacitor

▪ Parallel with 5.6KΩ resistor
* Alternate part #24K712110
▪ Alternate part #24B711875
▲ Alternate part #24K712111
† Requires new mounting holes
● Parallel with 6.8KΩ resistor

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PARTS LIST AND DESCRIPTIONS (Continued)

SELENIUM RECTIFIER

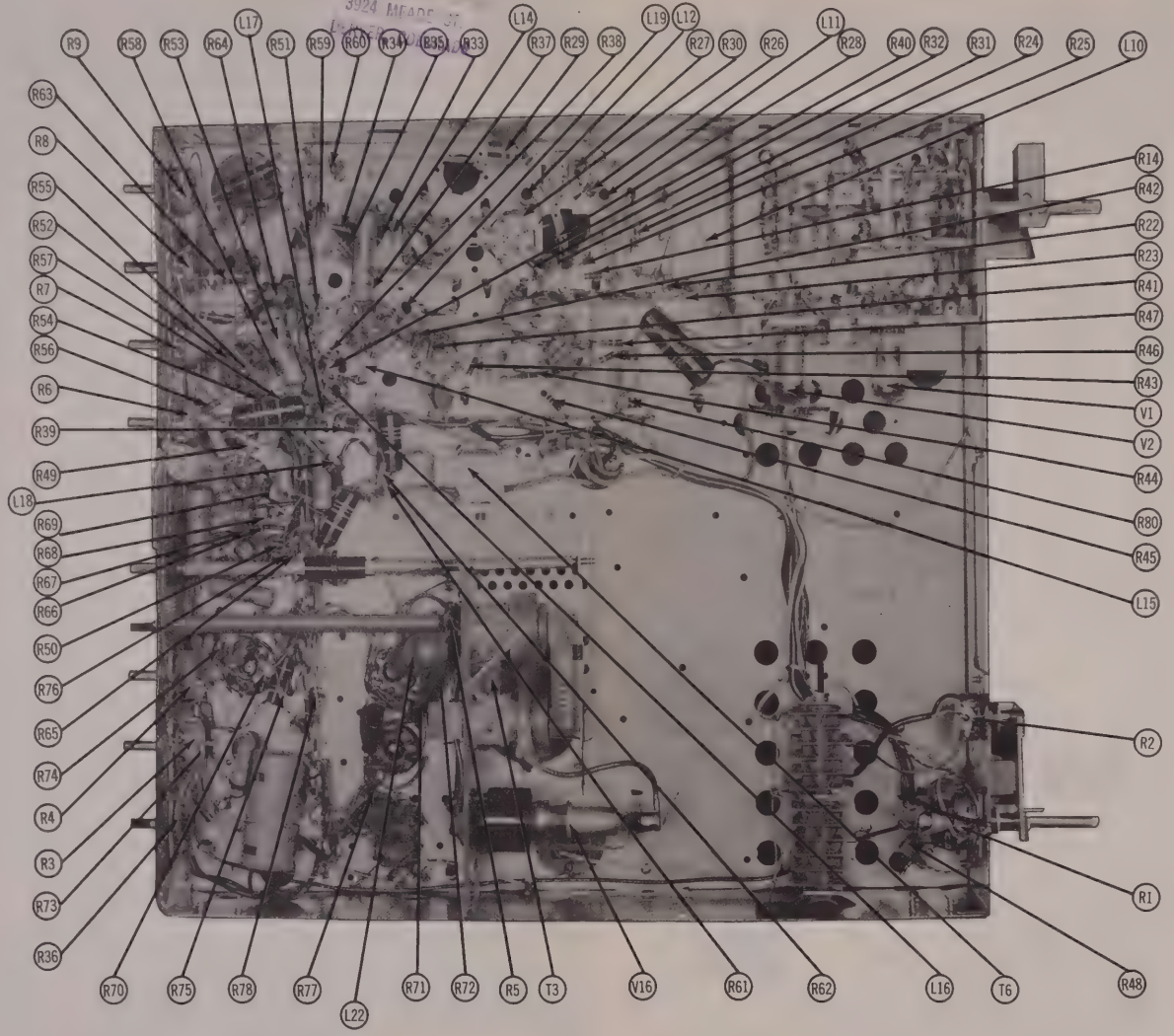
ITEM No.	RATING	REPLACEMENT DATA					NOTES
	CURRENT	MOTOROLA PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART No.	MALLORY PART No.	
M1	.175ADC	48B720028	NF5	5Q1	1010	6S250	① Alternate Sel. Rect.
M2	.175ADC	48B720028 48B700555 ① 48B703089 ① 48B720023 ①	NF5	5Q1	1010	6S250	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					MOTOROLA PART No.		
M3	Bayonet	6-8	.15	Brown	65X11854		Type #47

MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M4	RF Tuner	1U720781	TT-48 (Complete)
M5A	Crystal	48C711052	1N60 (Video Det)
B	Crystal	48K711077	Alternate
C	Crystal	48K712198	Alternate
D	Crystal	48K712199	Alternate
E	Crystal	48K712200	Alternate
M6	Switch	40A720172	Area Selector (Local, Suburban, Fringe)
M7	Centering Magnet	48A721145	Includes Yoke Cover
M8A	Ion Trap	24K711843	
B	Ion Trap	24K711842	Alternate
M9	Magnet	48B720968	Anti-pin cushion correction (Right-hand)
M10	Magnet	48K720969	Anti-pin cushion correction (Left-hand)
	Knob	36B712294	Area Selector
	Knob	36A485457	Vert. & Horiz. Hold (Setscrew type)
	Knob	36A720197	Vert. & Horiz. Hold (Push-on type)
	Knob	36B720253	Channel Selector
	Knob	36C720252	Contrast
	Knob	36B720250	Off/On Volume & Fine Tuning
	Knob	36C720251	Tone
	Back Cover	1V721216	Includes Line Cord (Model 17F13, 17F13B)
	Back Cover	1V720799	Includes Line Cord (Model 17K14, L7K14A, 17K14B, 17K14W, 17K15, 17K15B)
	Back Cover	1V721160	Includes Line Cord (Model 17K16)
	Back Cover	1V721115	Includes Line Cord (Model 17T11)
	Back Cover	1V720795	Includes Line Cord (Models 17T12, 17T12B & 17T12W)
	Bezel	13K720279	Picture Tube Safety Glass Frame
	Safety Glass	61D720245	
	Cabinet	16F720722	Model 17F13
	Cabinet	16K720723	Model 17F13B
	Cabinet	16F720232	Model 17K14
	Cabinet	16F720651	Model 17K14A
	Cabinet	16K720233	Model 17K14B
	Cabinet	16K720234	Model 17K14W
	Cabinet	16F720763	Model 17K15
	Cabinet	16K720764	Model 17K15B
	Cabinet	16F721128	Model 17K16
	Cabinet	16F720297	Model 17T11
	Cabinet	16E720230	Model 17T12
	Cabinet	16K720231	Model 17T12B
	Cabinet	16K720716	Model 17T12W



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

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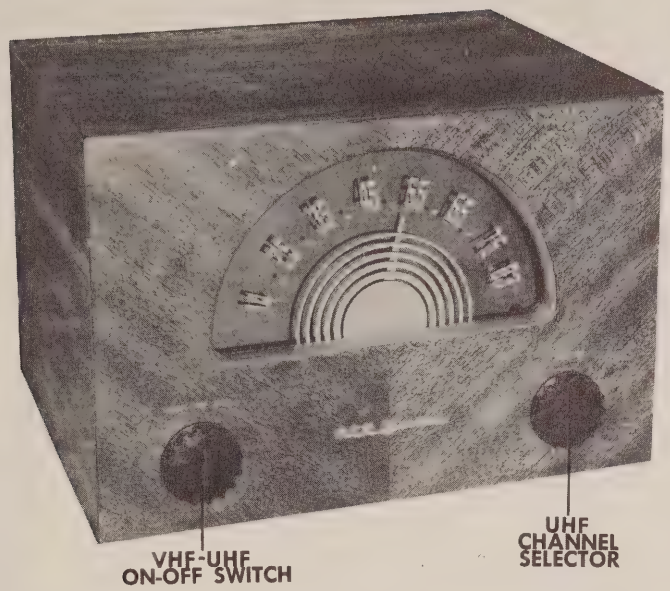
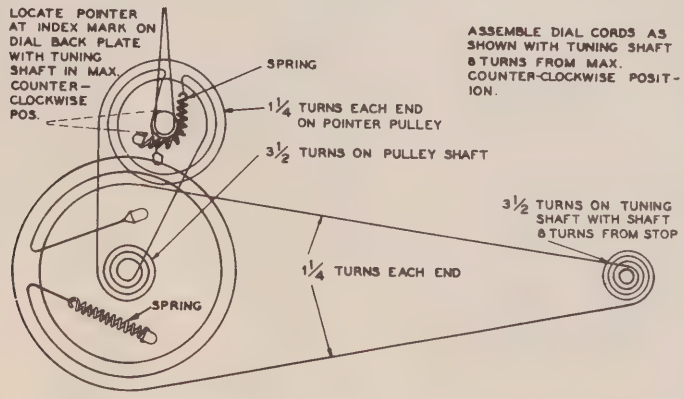
RCA VICTOR
MODEL U70 (Ch. KCS70)



TRADE NAME	RCA Victor Model U70 (Ch. KCS70)
MANUFACTURER	RCA Victor Div., Radio Corp. of America, Camden, N.J.
TYPE SET	AC Operated All Channel UHF Converter with Self-Contained Power Supply
TUBES (FOUR)	Types 6AF4 RF Osc., 6CB6 1st. IF Amp., 6CB6 2nd. IF Amp., 5Y3GT Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING .29 Amp @ 117 Volts AC
TUNING RANGE-	All 70 UHF Channels


LOCATE POINTER AT INDEX MARK ON DIAL BACK PLATE WITH TUNING SHAFT IN MAX. COUNTER-CLOCKWISE POS.
SPRING
1¼ TURNS EACH END ON POINTER PULLEY
3½ TURNS ON PULLEY SHAFT
ASSEMBLE DIAL CORDS AS SHOWN WITH TUNING SHAFT 8 TURNS FROM MAX. COUNTER-CLOCKWISE POSITION.
3½ TURNS ON TUNING SHAFT WITH SHAFT 8 TURNS FROM STOP
1¼ TURNS EACH END
SPRING

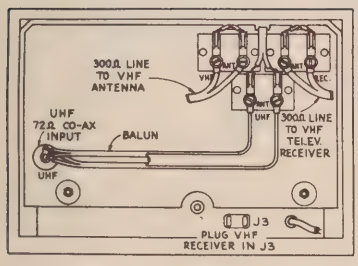


FIG. 7 - Converter Connections When VHF Antenna Is Employed For UHF Reception.

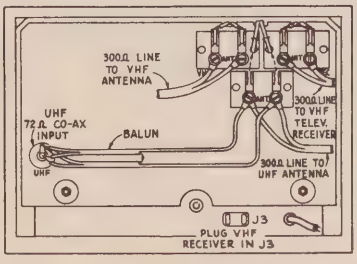


FIG. 8 - Converter Connections For Use Of Separate UHF Antenna With 300Ω Lead-In Wire.

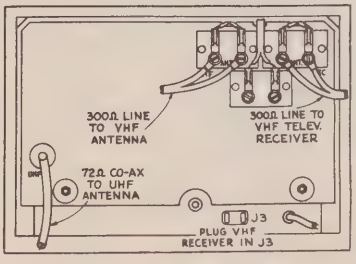


FIG. 9 - Converter Connections For Use Of Separate UHF Antenna With 72Ω Co-ax Lead-In Wire.

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: RCA Victor PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	RF Oscillator	6AF4	6AF4	7DK	
V2	1st. IF Amplifier	6CB6	6CB6	7CM	
V3	2nd IF Amplifier	6CB6	6CB6	7CM	
V4	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	▲30	200	77086	AFH3-29		UPT64245		FP419.7	TVL-3640	
B	■30	200								
C	●50	200								
C2	10		77085							
C3	470		75198	SI470	D6-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C4	56		70599		TCZ-56		NP0-333-560			
C5	2		77210							
C6	18		77209							
C7	1000		77252	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C8	15		45465		TCZ-15		NP0K-150		5TCC-Q15	
C9	470		75198	SI470	D6-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C10	470		75198	SI470	D6-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C11	470		75198	SI470	D6-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C12	470		75198	SI470	D6-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C13	27		70935		TCZ-27		NP0K-270			
C14	27		70939		TCZ-27		NP0K-270			
C15	9		77108				NP0K-090			
C16	1000		77084							
C17	1000		77084							

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: RCA Victor PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R1	8200Ω	1/2	503282	BTS-8200	
R2	1500Ω	2	523215	BTB-1500	
R3	1500 Ω	2	523215	BTB-1500	
R4	33Ω	1/2	503033		
R5	150Ω	1/2	503115	BTS-150	
R6	2200Ω	1/2	503222	BTS-2200	
R7	47Ω	1/2	503047		

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: RCA Victor PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R8	68Ω	1/2	503068		
R9	10KΩ	1/2	503310	BTS-10K	
R10	3300Ω	1/2	503233	BTS-3300	
R11	1200Ω	1/2	503212	BTS-1200	
R12	330Ω	2	523133	BTB-3300	
R13	22KΩ	1	513322	BTA-22K	

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: RCA Victor PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC @ .29A	360VCT .045ADC	5VAC @ 2A	6.3VAC @ 1A	77080				

COILS (RF-IF)

ITEM No.	USE	DC RES.: PRI.	DC RES.: SEC.	REPLACEMENT DATA: RCA Victor PART No.	REPLACEMENT DATA: MERIT PART No.	NOTES
L1	Ant. Trans.	0Ω		77069		
L2	Fil. Choke	.1Ω		77109		
L3	Fil. Choke	.1Ω		77109		
L4	Cathode Choke	.1Ω		77109		
L5	Osc. Coil	0Ω		77224		Less core, part #77076
L6	RF Choke	.1Ω		77109		
L7	RF Choke	1.8Ω		72618		20 Microhenries
L8	Variable RF Choke	0Ω		77083		
L9	1st. IF Trans.	0Ω	0Ω	77081		
L10	2nd. IF Trans.	0Ω	0Ω	77082		

PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: RCA Victor PART No.		NOTES
M1	Bayonet	7.5	2	White	11765		Type #51

MISCELLANEOUS

ITEM No.	PART NAME	RCA Victor PART No.	NOTES
M2	Switch	77089	Function (Off/On -VHF-UHF)
M3	Crystal	77489	1N82 (Mixer)
	Knob	77251	Off/On - VHF-UHF (Maroon)
	Knob	77140	Tuning (Maroon)
	Back Cover	77097	Complete with terminal boards
	Terminal Board	76184	For Back Cover

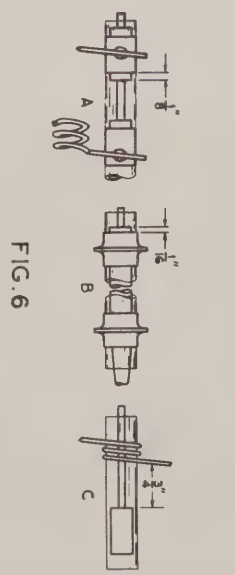


FIG. 6

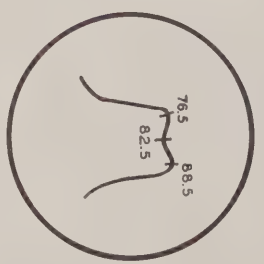


FIG. 3

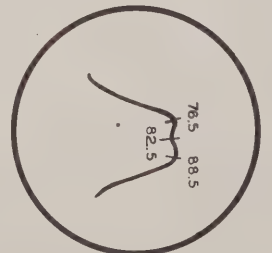


FIG. 4

FIG. 5

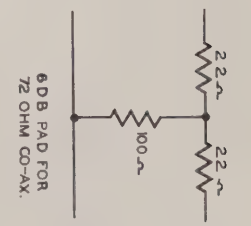
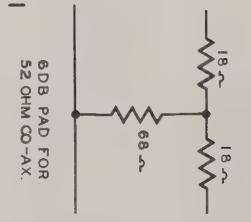


FIG. 1



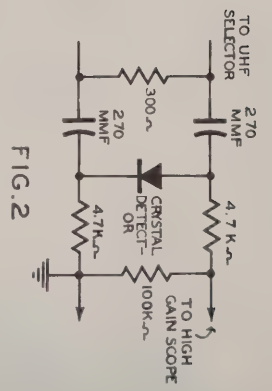


FIG. 2

IF ALIGNMENT

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Fig. 1	Thru attenuator (fig.1) to pin 1 (grid) of 6CB6 (V3) and to chassis.	81MC (18MC Swp)	76.5MC 82.5MC 88.5MC	Any	Vert. amp. thru 300Ω balanced detector (fig.2) to output leads of unit.	A1, A2, A3	Connect a jumper across the primary of L9 (from pin 7 of V2 to junction of R6 and C9). Adjust for response curve similar to fig. 3. The bandwidth capacitor A3 is a short length of wire soldered to one lug of the IF transformer and projecting into the can thru a ceramic tube capacitor. Adjustment is made by pushing or pulling the wire in or out of the transformer can.
2.	1500MMF	Thru attenuator (fig.1) to pin 2 (cathode) of 6CB6 (V2) and to chassis	"	"	"	Vert. amp. thru 300Ω balanced detector across secondary of L10.	A4, A5, A6	Remove jumper from L9 and connect across R10. Adjust for response curve similar to fig. 4. The bandwidth capacitor A6 is adjusted in same manner as A3 in step 1.
3.	"	"	"	"	"	Connect as in step 1.		Remove jumper from R10. Check for response curve as in fig. 5. Keep generator output low to avoid distorting the response curve. If excessive tilt is present retouch A1, A2, A4 and A5 to reduce tilt.

RF ALIGNMENT

RF alignment requires the use of a sweep generator with a range of 470MC to 890MC and a marker generator with a range covering 480, 630 and 840MC. If such equipment is not available alignment of the RF section should not be attempted.
If the selector needs only touch up adjustment, no presetting of the tuning cores is needed.
If the selector is completely out of alignment pre-set the tuning cores as follows:

Set the dial drive mechanism 1-1/4 turns from the low frequency stop (Channel 14 end of dial).
Preset A7 as in section A of fig. 6.
Preset A8 and A9 as in section B of fig. 6.
Preset A10 so that the tapered end of the core is about 3/4 inch from the closest end of the L5 Coil as in section C of fig. 6.

Turn the dial drive mechanism to the stop at the low frequency end of dial. Set pointer to coincide with the end marker on the dial back plate. Turn dial drive until pointer is 17 degrees to left of center of dial when selector is in an upright position. Mark the dial back plate at this point for easy reference. This is the 630MC calibration point.
Three generators are required for this alignment procedure, a UHF sweep generator and a UHF marker generator as mentioned above, and a VHF marker generator. If the UHF sweep generator has a built-in marker it may be used. If a separate UHF marker generator is required, it should be loosely coupled to the selector input.
The VHF marker generator should be loosely coupled to pin 2 (cathode) of V2 and set at 82.5MC.
The shields must be in place over top and bottom of the RF section when making any adjustments. Connect a 1000Ω resistor across secondary of L9.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	Fig. 1	Thru attenuator network (fig. 1) to selector input jack.	630MC (30MC Swp)	630MC	Tune to 630MC calibration mark	Vert. amp. thru 300Ω balanced detector across primary of L9.	A7, A8 A9, L1, A10	Adjust A7 so that 82.5MC and 630MC markers coincide. Adjust A8 and A9 for maximum amplitude symmetrical response with 630MC as center frequency. Vary the position of the coupling link of L1 for a 20MC bandwidth at 70% response. Adjust A10 for maximum response at center of bandpass. Repeat adjustments of A8, A9, L1 and A10 if necessary. Check crystal current by plugging 0-5MA meter in crystal current jack. If meter reading is not between .8MA and 5MA either crystal is defective or oscillator is not operating properly. Turn off all generators momentarily. If crystal current decreases more than 10% excessive input signals are being used and improper alignment will result.
5.	"	"	490MC (30MC Swp)	490MC	Tune to 490MC	"	A7, L5	Turn off the 82.5MC marker. Tune the selector and the sweep generator until the 490MC marker is centered in the bandpass. Turn the 82.5MC marker back on. Adjust A7 until the markers coincide. Then over shoot the adjustment slightly less than the amount required to make the markers coincide. Compress or expand L5 until markers again coincide. Repeat step 4, adjusting A8, A9, L1 and A10 only if necessary. Repeat step 5, continuing above procedure until no improvement is noted. Make last adjustment at 630MC before going to step 6.
6.	"	"	840MC (30MC Swp)	840MC	Tune to 840MC	"	A11	Turn off the 82.5MC marker. Tune the selector and the sweep generator to center, the response at 840MC. Turn the 82.5MC marker back on. Adjust A11 until the markers coincide.

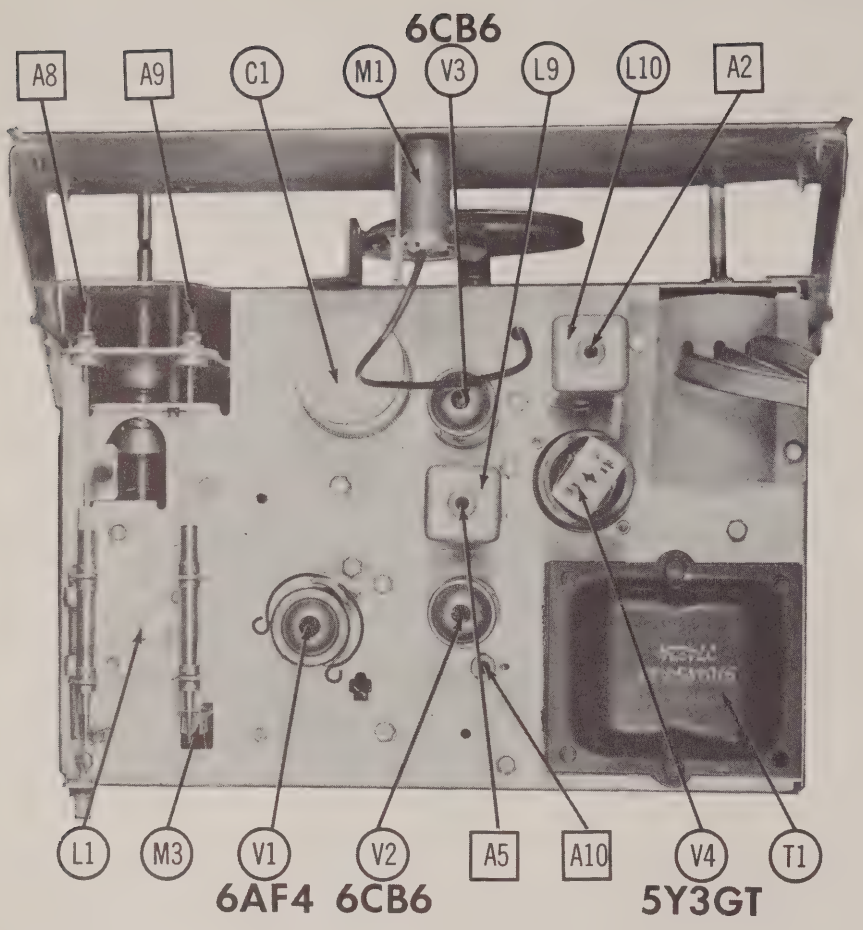
CHECK OF TRACKING

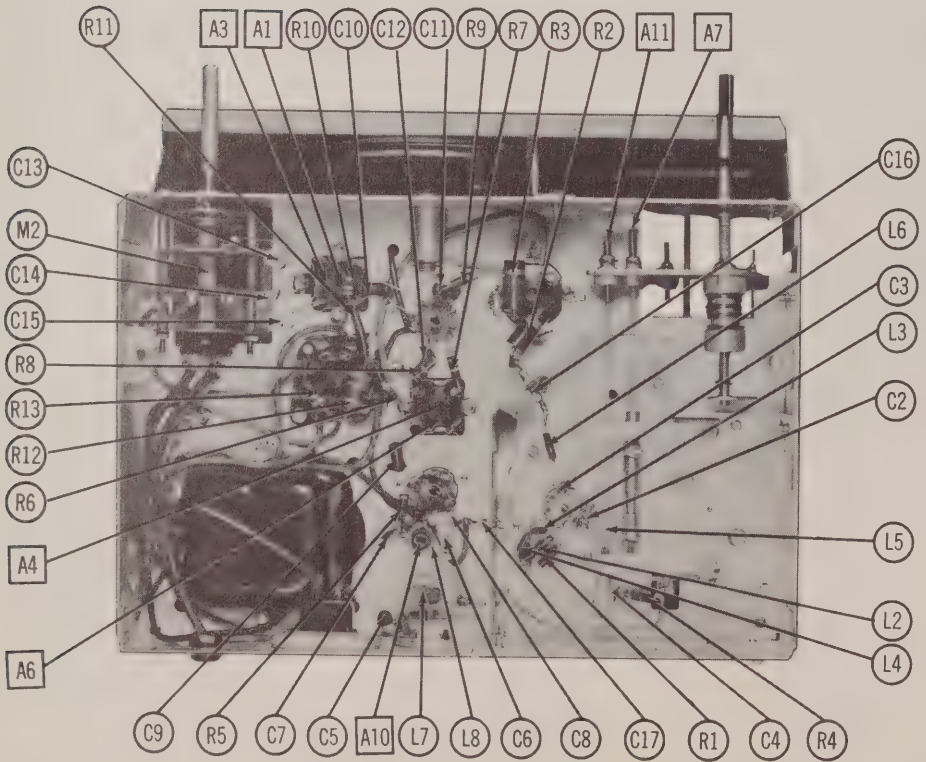
Turn off the UHF marker.
Tune the sweep generator across the band in small steps. Tune in the sweep generator with the selector.
The response on the scope should not fall below 70% response between the 76.5 MC and 88.5MC markers.
Crystal current should range between .8MA and 5MA over entire tuning range, as measured with bottom shield in place and with no signal input.

OVERALL RESPONSE CHECK

Leave sweep and signal generators connected as for RF Alignment.
Final check should be made on the air, receiving a known weak signal. Excessive snow in picture may indicate the need of a new mixer crystal. If crystal is replaced, RF Alignment should not be touched.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Fig. 1	Thru attenuator network (fig.1) to selector input jack.	630MC (30MC Swp)	630MC	Tune to 630MC	Vert. amp. thru 300Ω balanced detector (fig.2) to output leads of selector unit		Remove the 1000Ω resistor from secondary of L9. Check for response similar to fig.5, with not more than 30% dip or tilt.


6CB6
A8
A9
C1
M1
V3
L9
L10
A2
L1
M3
V1
V2
A5
A10
V4
T1
6AF4
6CB6
5Y3GT


R11
A3
A1
R10
C10
C12
C11
R9
R7
R3
R2
A11
A7
C13
M2
C14
C15
R8
R13
R12
R6
A4
A6
C16
L6
C3
L3
C2
L5
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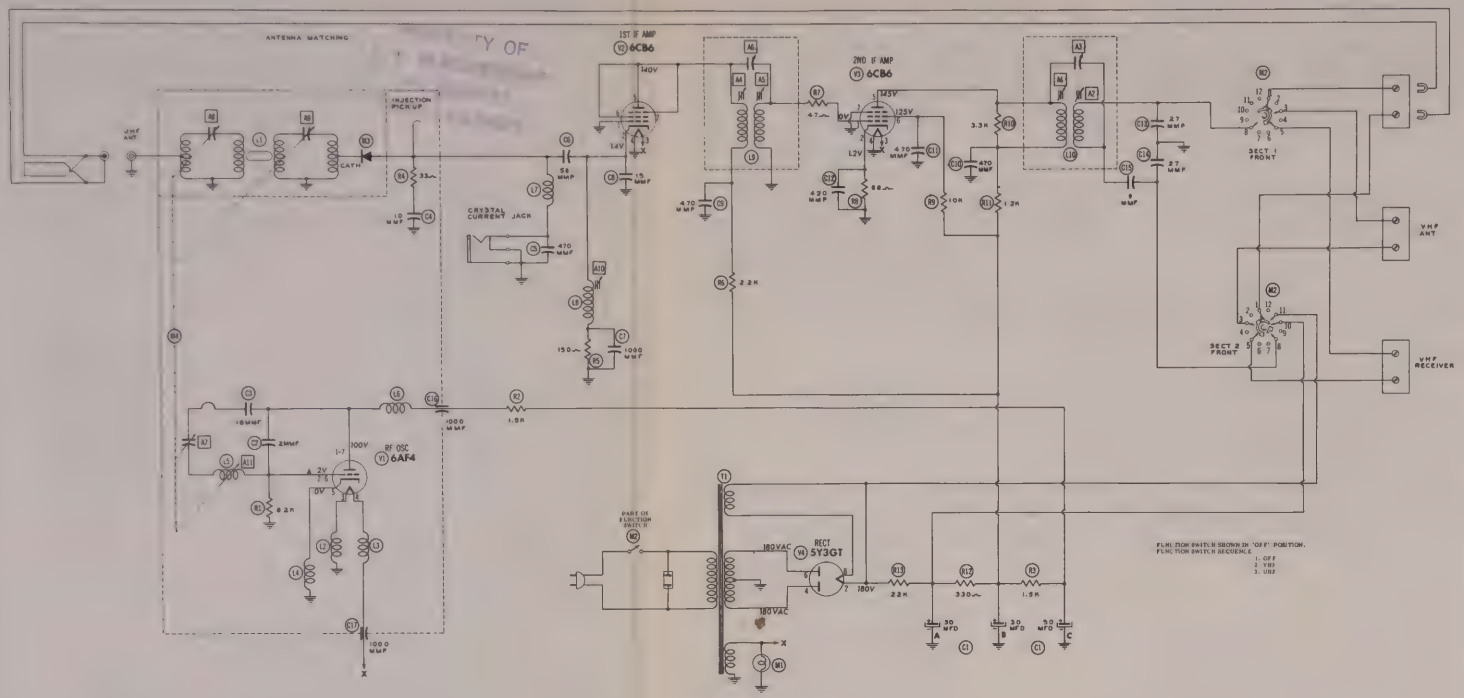
C8
C17
R1
C4
R4



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6AF4	†3.3KΩ	8.2KΩ	.1Ω	.3Ω	.2Ω	8.2KΩ	†3.3KΩ	
V 2	6CB6	0Ω	150Ω	.2Ω	0Ω	†2.5KΩ	†2.5KΩ	†2.5KΩ	
V 3	6CB6	47Ω	68Ω	.2Ω	0Ω	†1.5KΩ	†10KΩ	0Ω	
V 4	5Y3GT	INF	600KΩ	INF	174Ω	†330Ω	165Ω	†0Ω	600KΩ

ALL MEASUREMENTS TAKEN IN UHF POSITION
† MEASURED FROM PIN 2 OF V4
▲ TAKEN WITH VACUUM TUBE VOLTMETER

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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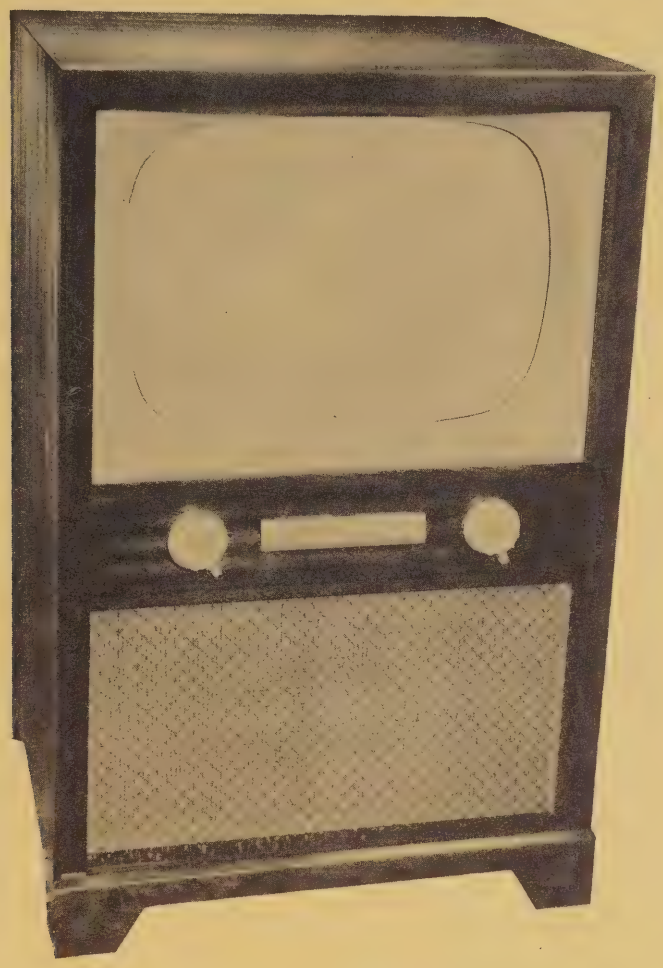

MODEL 21C-9210C

STEWART-WARNER MODELS 21C-9210C, 21T-9210A, 9210-C

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DATE 1–53 SET 192 FOLDER 8

STEWART-WARNER MODELS 21C-9210C, 21T-9210A, 9210-C

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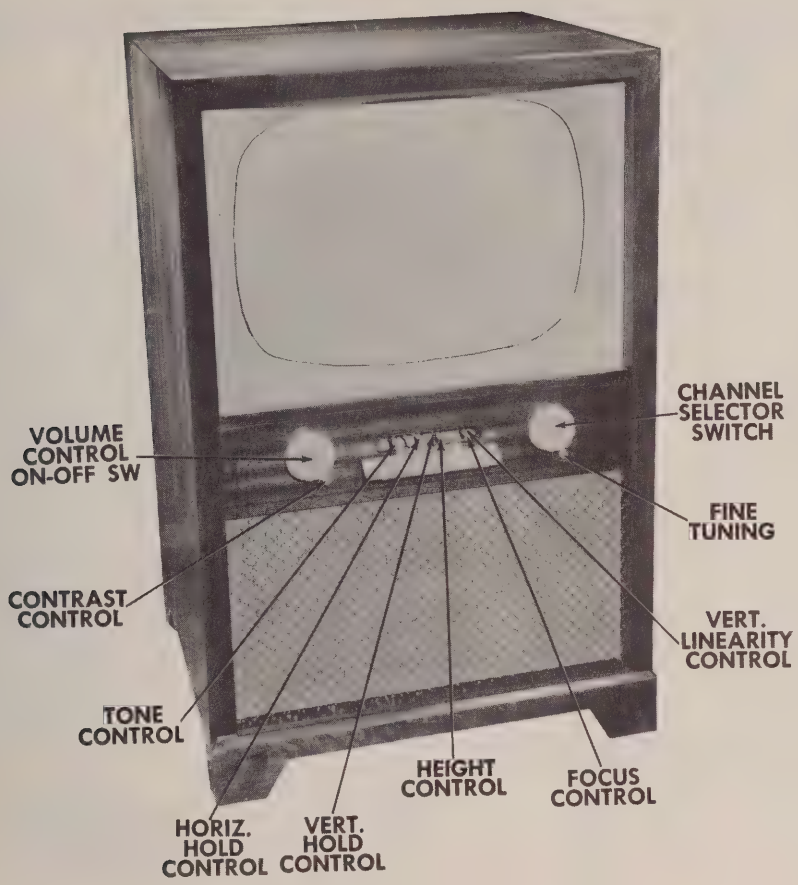
ENSHIP
3924 MEADE ST.
DENVER, COLORADO



STEWART WARNER 21C-9210C

TRADE NAME	Stewart Warner Models 9210-C, 21C-9210C, 21T-9210A, (Series A, B, C, D, E)
MANUFACTURER	Stewart Warner Elect., Div. of Stewart Warner Corp., 1300 N. Kostner Ave., Chicago 15, Illinois
TYPE SET	Television Receiver
TUBES	Nineteen
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING 1.86 Amp. @ 117 Volts Ac
TUNING RANGE—	Channel 2 thru 13, Video IF 26.75MC, Sound IF 22.25MC (Intercarrier)

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STEWART-WARNER MODELS 21C-9210C, 21T-9210A, 9210-C

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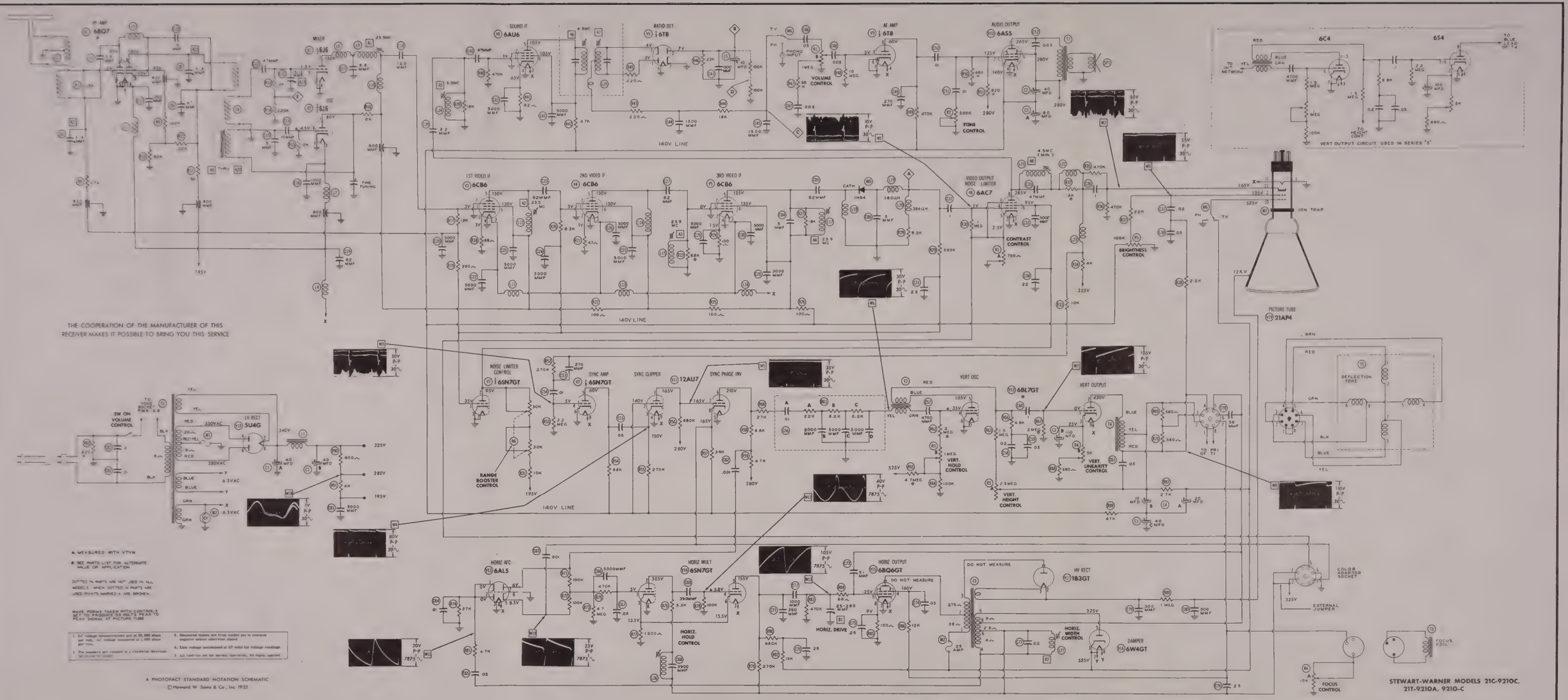
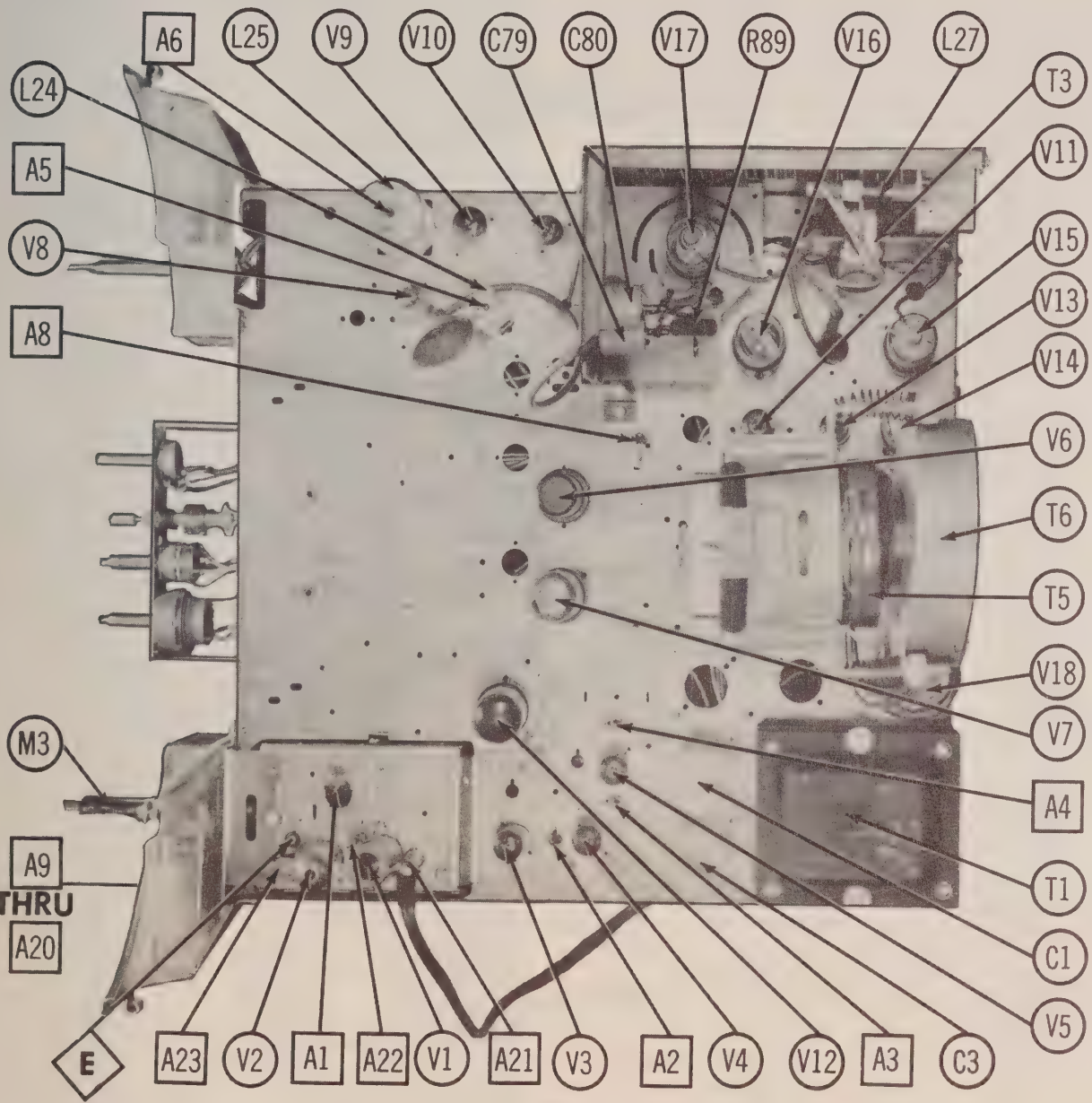
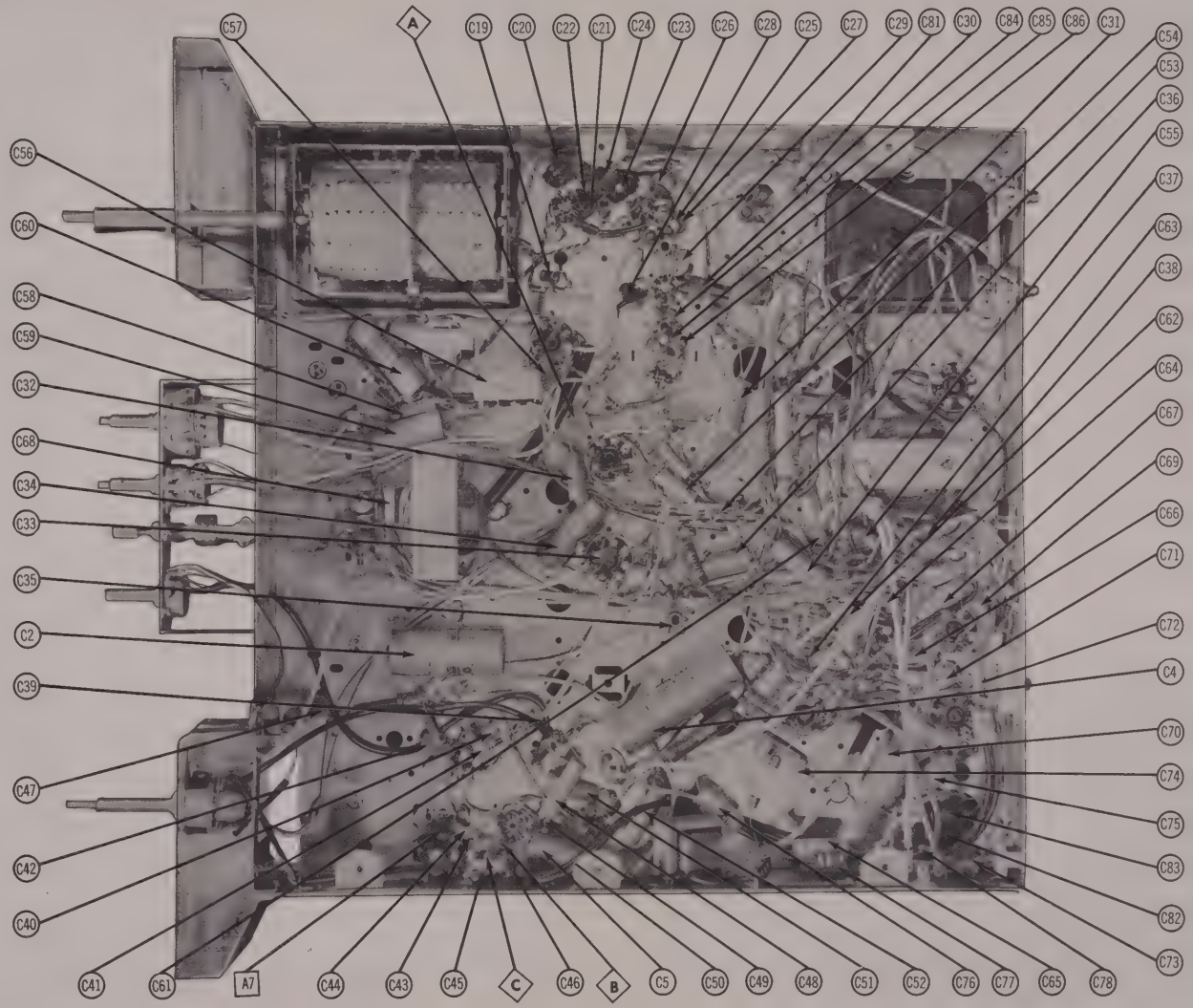


STEWART-WARNER
MODELS 21C-9210C, 21T-9210A, 9210-C



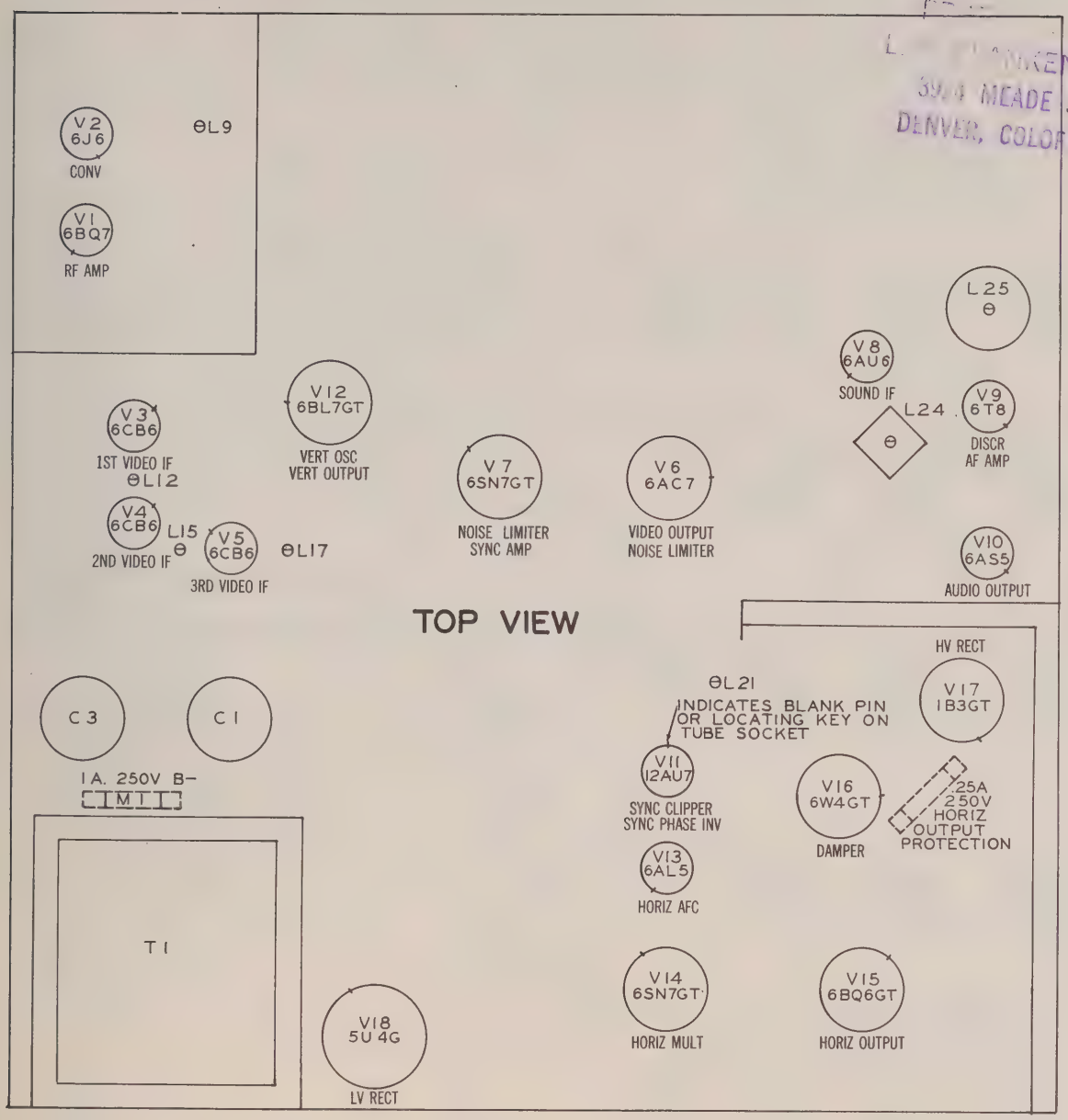
CHASSIS TOP VIEW

PROPERTY OF
L. F. BLANKENS
3924



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound-V18 Fuse (M1)

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster-V2, V3, V4, V5, V6, V10
No pic, no sound has snow-V1, V2, V3
No pic, has sound, has raster-V6, V19
Has pic, no sound-V8, V9, V10
Overloaded picture-V7

SYNC FAILURE
No vert. sync-V11, V12
No horiz. sync-V11, V13, V14
No vert. or horiz. sync-V7, V11

SWEEP FAILURE
No raster, has sound-V14, V15, V16, V17 V19, Fuse (M2)
No vertical deflection-V12
Poor vert. linearity or foldover-V12
Poor horiz. linearity or foldover-V14, V15, V16
Narrow picture-V14, V15, V16, V17, V18
Vert. off freq. -V11, V12
Horiz. off freq. -V11, V13, V14

L. [illegible] ANKENSHIP
3944 MEADE S
DENVER, COLO[illegible]

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard can be eliminated by removing the horizontal multivibrator tube, V14, from its socket.

VIDEO IF ALIGNMENT

Remove the converter tube (V2) from its socket and replace with a 6J6 which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the ungrounded side of C31. Connect the positive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	23.5MC (Unmod.)	Any	DC probe to point ⟨A⟩. Common to chassis.	A1, A2	Adjust for maximum deflection.
2.	"	"	25.9MC	"	"	A3, A4	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	25MC (10MC Swp)	22.25MC 26.75MC	Any	Vert. Amp. to point ⟨A⟩. Low side to chassis.		Check for response curve similar to Fig.1. If necessary retouch A1 thru A4 for desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (±1%) resistors in series from point ⟨B⟩ to chassis. The junction of these two resistors is alignment point ⟨D⟩ as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
4.	.001MFD	High side to point ⟨A⟩. Low side to chassis.	4.5MC	Any	DC probe to point ⟨B⟩. Common to chassis.	A5, A6	Adjust for maximum deflection.
5.	"	"	"	"	DC probe to point ⟨C⟩. Common to point ⟨D⟩.	A7	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	.001MFD	High side to point ⟨A⟩. Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. Amp. to point ⟨B⟩. Low side to chassis.	A5, A6	Disconnect stabilizer capacitor C5. Adjust for curve of maximum amplitude and symmetry as in Fig. 2.
5.	"	"	"	"	"	Vert. Amp. to point ⟨C⟩. Low side to chassis.	A7	Reconnect capacitor C5. Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 3. SLIGHTLY retouch A6 for maximum amplitude and straightness of of crossover lines.

4.5MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
6.	.001MFD	High side to point ⟨A⟩. Low side to chassis.	4.5MC (Unmod.)	Any	DC probe thru detector (Fig.4) to pin 11 of picture tube. Common to chassis.	A8	Adjust for MINIMUM deflection.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
The channel oscillator adjustments are reached through a hole just to the right of the channel switch shaft.
The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. Amp. to point ⟨A⟩. Low side to chassis.	A9	Adjust to place sound marker as shown in Fig. 5. Video Marker should be at 50%.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A10	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A11	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A12	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A13	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A14	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A15	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A16	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A17	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A18	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A19	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A20	

ALIGNMENT INSTRUCTIONS (CONT.)

RF AND MIXER ALIGNMENT

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 209.75MC	12	Vert. Amp. thru 10KΩ to point (E). Low side to chassis.	A21, A22, A23	Adjust for response curve similar to Fig.6 with markers above 90%.
9.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"		Check for response curve similar to Fig.6. If markers fall below 70% on any channel make slight compromise adjustments of A21, A22 and A23 with channel switch set to that channel. Recheck all other channels to see that they have not been seriously affected.
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			195MC (10MC Swp)	193.25MC 197.75MC	10			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

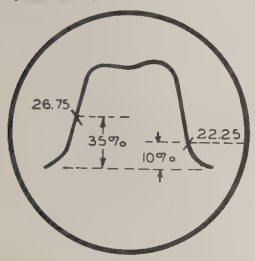


FIG.1

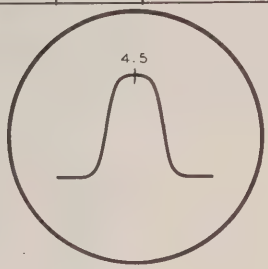


FIG. 2

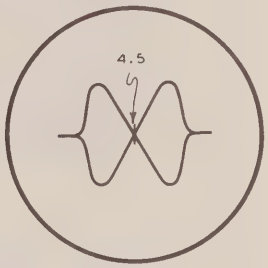


FIG. 3

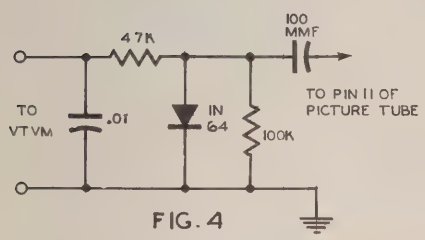


FIG. 4

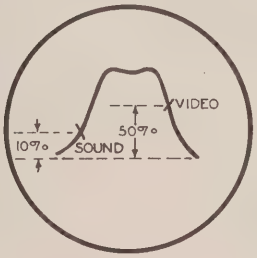


FIG. 5

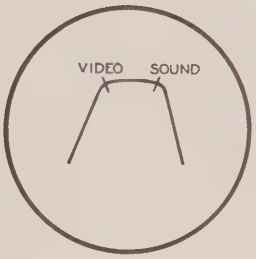
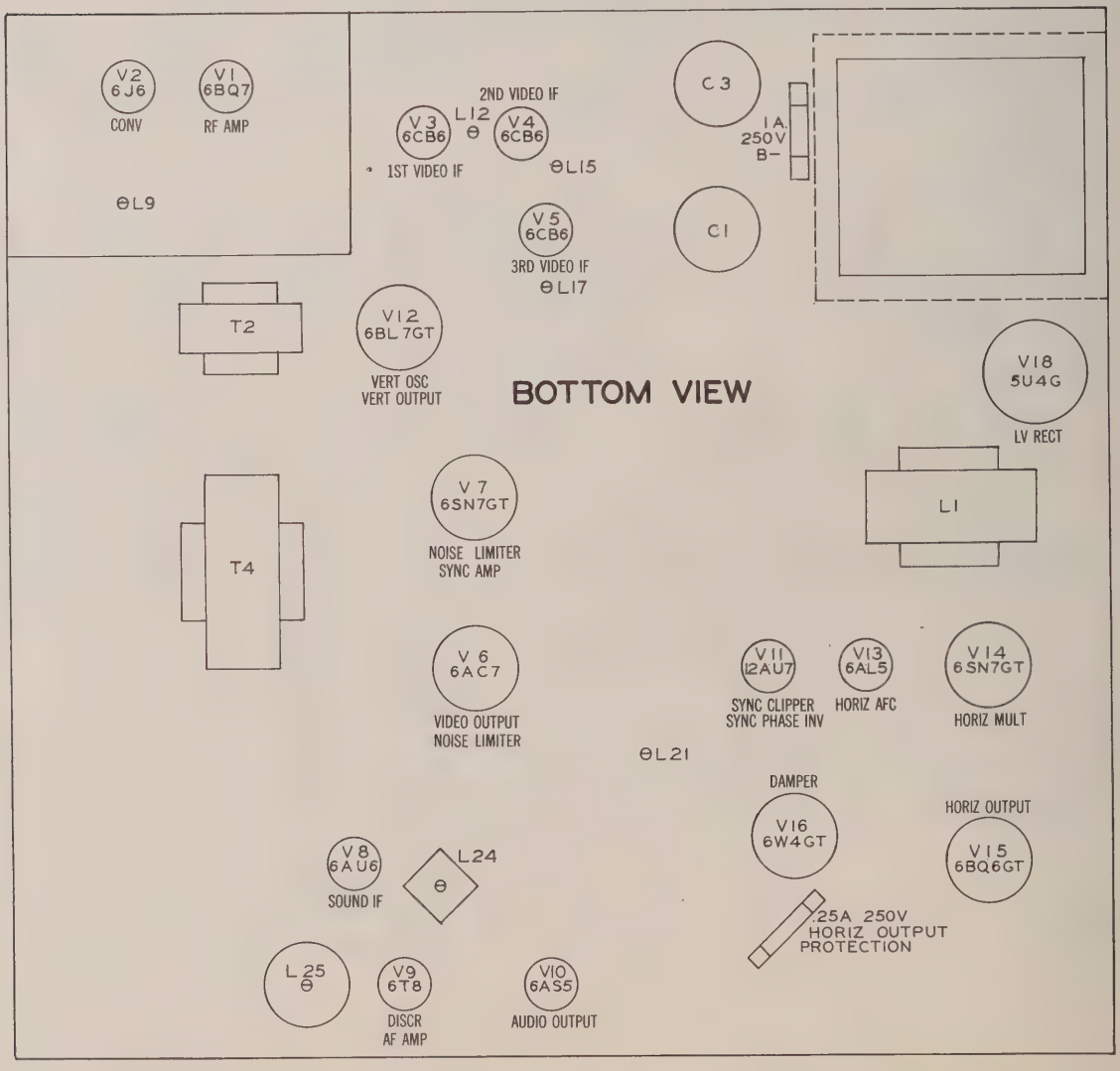


FIG.6

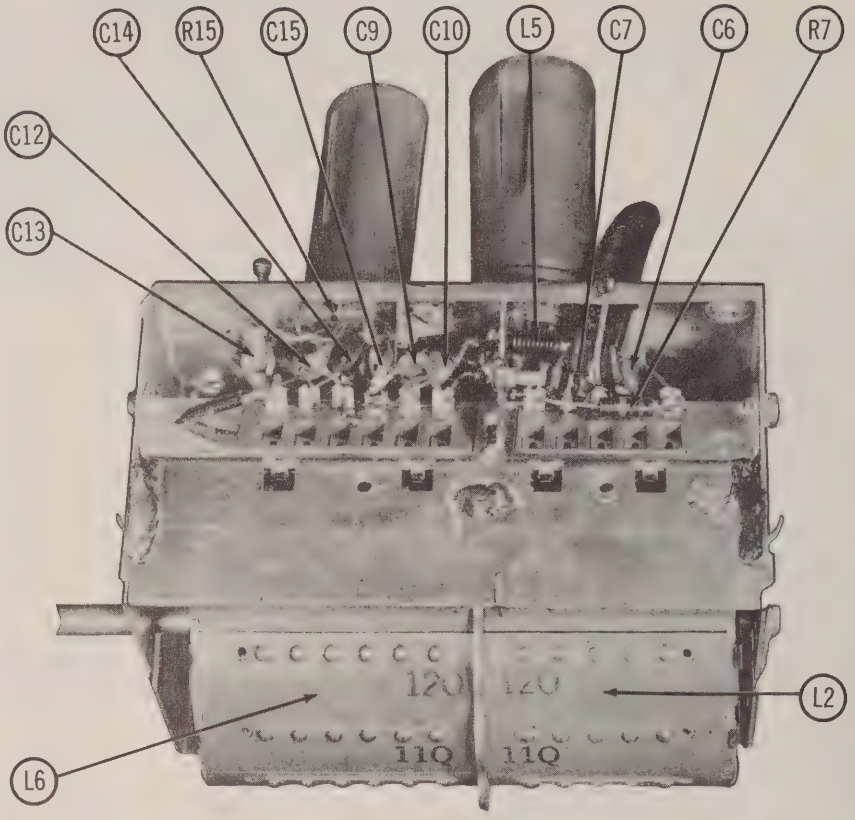
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BQ7	INF	615KΩ	0Ω	.1Ω	0Ω	#6.2KΩ	165KΩ	INF	0Ω
V 2	6J6	†10.3KΩ	†300Ω	.1Ω	0Ω	230KΩ	10KΩ	0Ω		
V 3	6CB6	569KΩ	68Ω	.1Ω	0Ω	†300Ω	† 300Ω	0Ω		
V 4	6CB6	577KΩ	47Ω	.1Ω	0Ω	†200Ω	†200Ω	0Ω		
V 5	6CB6	.1Ω	100Ω	.1Ω	0Ω	†100Ω	†100Ω	0Ω		
V 6	6AC7	0Ω	0Ω	140Ω	1 Meg	140Ω	#16KΩ	.1Ω	#4.1KΩ	
V 7	6SN7GT	568KΩ	#16KΩ	0Ω	2.2Meg	†68KΩ	0Ω	0Ω	.1Ω	
V 8	6AU6	470KΩ	0Ω	.1Ω	0Ω	†4.7KΩ	†4.7KΩ	82Ω		
V 9	6T8	INF	22KΩ	INF	.1Ω	0Ω	0Ω	0Ω	10 Meg	†470KΩ
V 10	6AS5	80KΩ	375KΩ	.1Ω	0Ω	375KΩ	#673Ω	#1.1KΩ		
V 11	12AU7	#680KΩ	†0Ω	†270KΩ	0Ω	0Ω	#11.5KΩ	#680KΩ	†3.9KΩ	.1Ω
V 12	6BL7GT	2 Meg	■3.5KΩ	920Ω	2.4Meg	■2.6Meg	0Ω	0Ω	.1Ω	
V 13	6AL5	27KΩ	27KΩ	0Ω	.1Ω	4.8Meg	0Ω	4.8Meg		
V 14	6SN7GT	5.2Meg	#3.4KΩ	1.5KΩ	100KΩ	#270KΩ	1.5KΩ	.1Ω	0Ω	
V 15	6BQ6GT	INF	.1Ω	INF	#12KΩ	470KΩ	470KΩ	0Ω	100Ω	Top Cap ■36Ω
V 16	6W4GT	■0Ω	INF	750KΩ	INF	#76Ω	■0Ω	■0Ω	■.1Ω	
V 17	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								Top Cap ■311Ω
V 18	5U4G	INF	13.5KΩ	INF	20.5Ω	.1Ω	19.5Ω	INF	13.5KΩ	
V 19	21AP4	0Ω	80KΩ	Pin 10 ■0Ω	Pin 11 240KΩ	Pin 12 .1Ω				

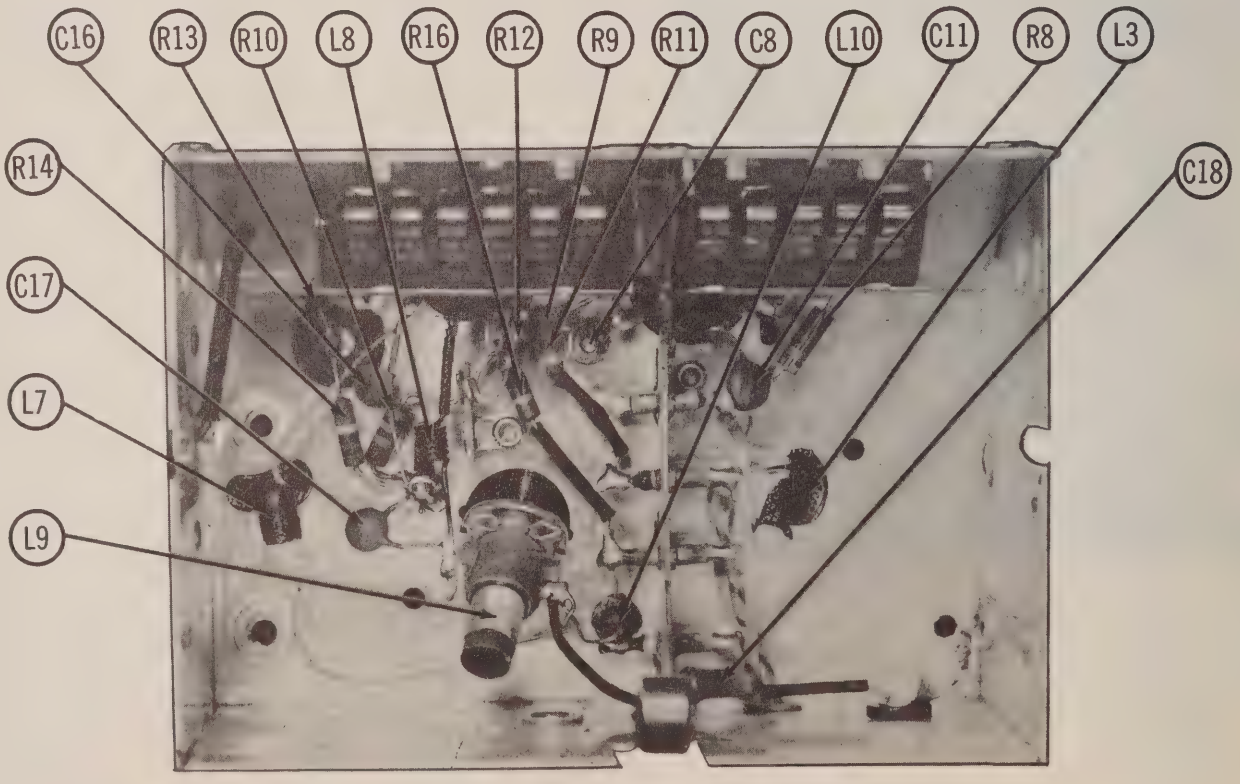
† MEASURED FROM PIN 1 OF V10
# MEASURED FROM PIN 8 OF V18
■ MEASURED FROM PIN 3 OF V16



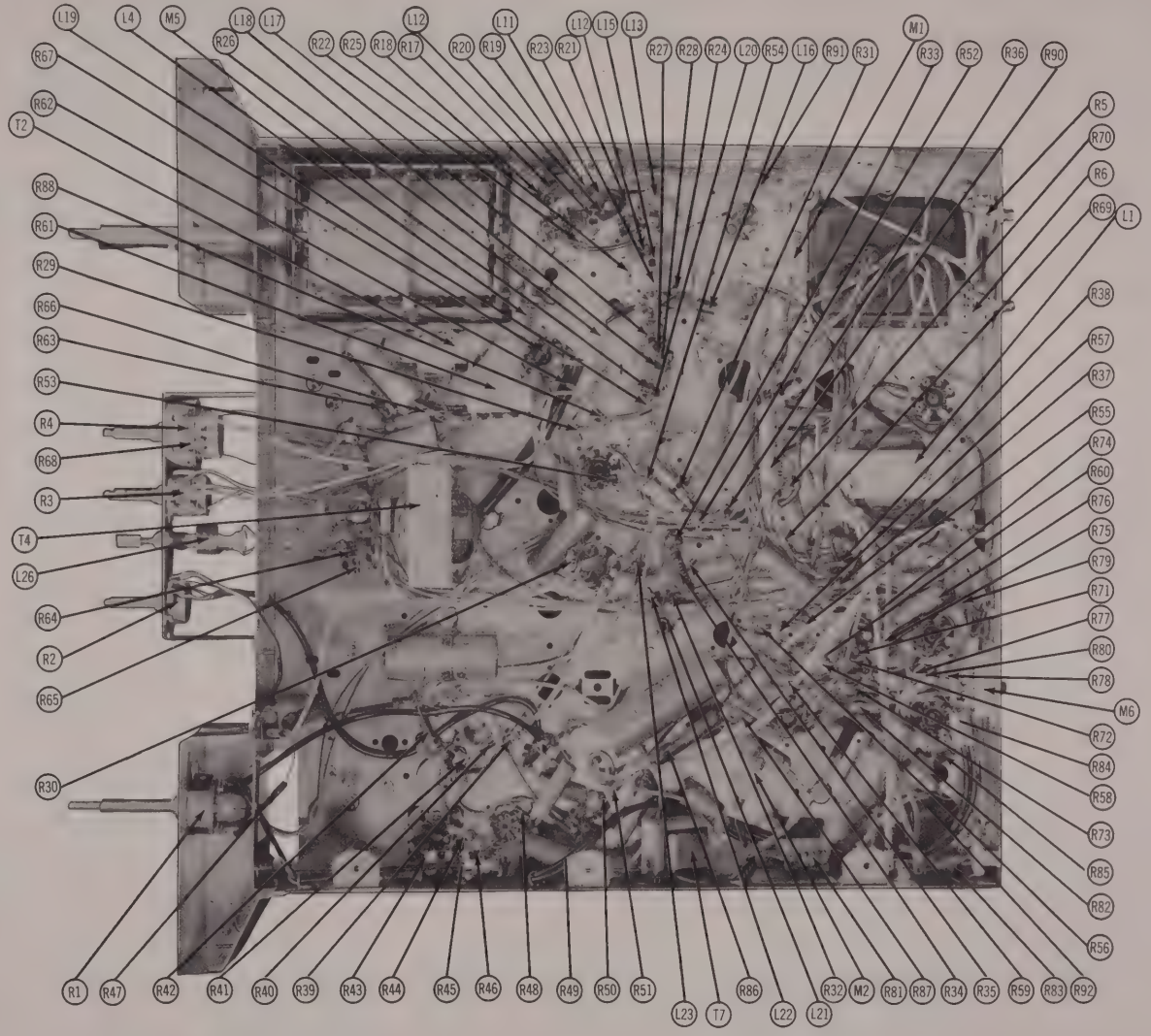
TUBE PLACEMENT CHART



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

TROUBLE SHOOTING AIDS

SWEEP

HORIZONTAL

LOSS OF SWEEP

Check waveform W13;

If not satisfactory,	If satisfactory,
Substitute V14 and check associated components.	Substitute V15 and V16. Check yoke and associated components.

INSUFFICIENT SWEEP

Check setting of drive control.

Check waveform W13;

If not satisfactory,	If satisfactory,
Substitute V14 and check associated components.	Substitute V15 and V16. Check associated components. Check C73 for open by disconnecting one end. Sweep should decrease slightly if capacitor if OK. Check C74 and C77 for open.

DRIVE LINES

Check setting of drive control (B1). Substitute V15 and V16. Check C4B and C77 for open.

COMPRESSED LEFT SIDE

Substitute V15 and V16. Check T3 and associated components.

FOLDS

Substitute V16. Check associated components.

XMAS TREE EFFECT

Substitute V14. Check C68 and C69. Check associated components.

VERTICAL

LOSS OF SWEEP

Check waveform at W7;

If not satisfactory,	If satisfactory,
Substitute V12. Check associated components.	Check vertical output transformer.

INSUFFICIENT SWEEP

Check amplitude of waveform at W7;

If not satisfactory,	If satisfactory,
Substitute V12 and check components. Check C4A for open.	Check T4. Substitute V12.

COMPRESSED AT BOTTOM

Check C60 for leaky condition. Check C3B in vertical output tube cathode for open.

COMPRESSED AT TOP, STRETCHED AT BOTTOM

If adjustment of height and vertical linearity control does not correct this condition, check C58 and C59 for open.

FOLDS

Substitute V12 and check C3B.

SYNC

HORIZONTAL

LOSS OF SYNC

Check waveform at W10;

If not correct,	If correct,
Substitute V7 and V11. Check circuit components.	Check waveform at W11:

Check waveform W11;

If not correct,	If correct,
Check feedback network (C64, C65, R74 & R81)	Substitute V13 and V14. Check a associated components. Particularly C68 and L26.

CRITICAL HOLD

Substitute V13 and V14. If no change is noted, follow procedure outlined under horizontal, loss of sync.

PULLING PICTURE

Check V13 and associated components.

VERTICAL

LOSS OF SYNC

Check waveform W6;

If not correct,	If correct,
Substitute V11. Check associated components and integrater.	Substitute V12 and check associated components.

CRITICAL SYNC

Substitute V7 and V11. Check C54 and C55.

TRIGGERING

Substitute V12.

VIDEO

SOUND BARS

Check adjustment of A5 (4.5MC trap) . Check setting of local oscillator and alignment of IF stages.

POOR RESOLUTION

Check alignment of tuner and IF stages. Substitute V6 and check associated components.

SMEAR

Substitute V6 and check circuit components.

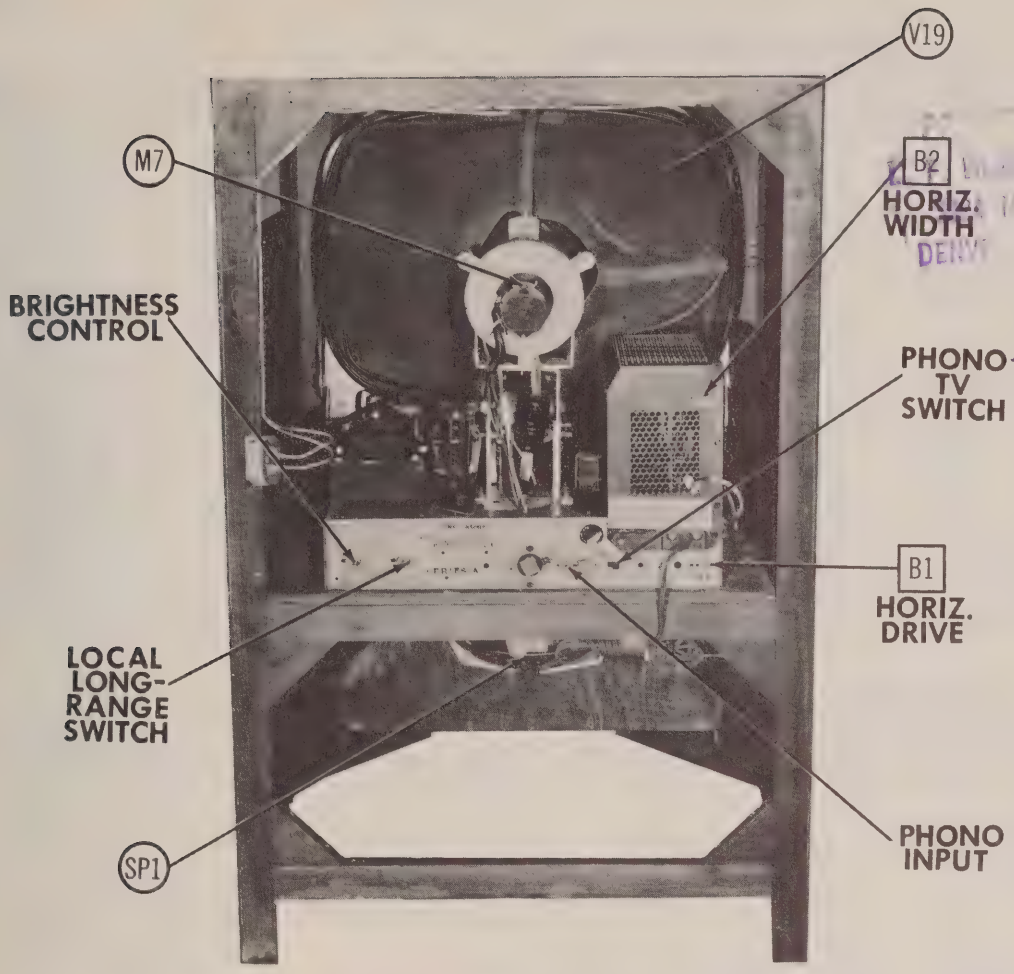
ONE WIDE BLACK BAR ACROSS THE PICTURE

Check tuner, IF and video amplifier tubes for leakage between filament and cathode.

POOR CONTRAST

Check waveform W2;

If distorted or weak,	If satisfactory,
Substitute V6 and check circuit components.	Check picture tube.



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Adjust the horizontal hold until the picture synchronizes horizontally.

Adjust the horizontal drive trimmer (B1), counter-clockwise as far as possible without the presence of vertical white lines or compression of the center of the picture.

Adjust the width slug (B2) until the picture is slightly wider than enough to fill the picture mask horizontally.

AGC ADJUSTMENT

Tune to strongest TV signal available.

Adjust brightness and contrast controls for normal viewing.

Starting from maximum counter-clockwise position adjust AGC control clockwise until picture becomes unstable, then turn counter-clockwise just enought to eliminate the instability or bending of picture.

DISASSEMBLY INSTRUCTIONS

1. Remove 4 push on type control knobs from front panel.
2. Remove 7 wood screws. Remove rear cover.
3. Disconnect built-in antenna.
4. Remove 2 wood screws. Remove antenna bracket.
5. Disconnect speaker. Remove 4 speaker nuts. Remove speaker.
6. Remove 5 chassis bolts. Remove chassis.
   Note. Remove grd.wire to name plate before pulling chassis.

NOTE : FOR PICTURE TUBE REMOVAL IT IS NECESSARY TO REMOVE CHASSIS AS OUTLINED ABOVE.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: Stewart-Warner PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V1A	RF Amplifier	6BQ7	6BQ7	9AJ	
B	RF Amplifier	6BQ7	6BQ7	9AJ	
V2	Converter	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd. Video IF Amp.	6CB6	6CB6	7CM	
V5	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V6	Video Output - Noise Limiter	6AC7	6AC7		
V7	Noise Limiter Control - Sync Amplifier	6SN7GT	6SN7GT	8BD	
V8	Sound IF Amp.	6AU6	6AU8	7BK	
V9	Ratio Detector - AF Amplifier	6T8	6T8	9E	
V10	Audio Output	6AS5	6AS5	7CV	
V11	Sync Clipper - Sync Phase Inv.	12AU7	12AU7	9A	
V12	Vert. Oscillator-Vert. Output	6BL7GT	6BL7GT	8BD	Series "E" used 6C4 Vert. Osc. & 6B4Vert. Output
V13	Horiz. AFC	6AL5	6AL5	6BT	
V14	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V15	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V16	Damper	6W4GT	6W4GT	4CG	
V17	HV Rectifier	1B3GT	1B3GT	2L	
V18	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: Stewart-Warner PART No.	SYLVANIA PART No.	RTMA BASE TYPE	NOTES
V19	21AP4	21AP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Stewart-Warner PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	+40 -20	450	530434	AFH3-44		C035		FP377	TVL-3787	
B	m40 -20	450								
C	+40 -20	250								
C2	40	300	180095	PRS450/40		BR4035		TC78	TVA-1611	
C3A	+80 -20	250	509002	AFH3-142		B060		FP375	TVL-3723	
B	±100	50								
C4A	20	450	530641	PRS450/20-250		BRD2245		TCD75	TVA-2730	Orange Plain
B	10	450								
C5	10	150	505174	PRS150/12		BR1015		TC43	TVA-1406	
C6	3-9		509064		839-10					
C7	3.6		520721				NP0X-5R6			
C8	.5-3		507968		839-3			C756SA		
C9	47		520719	BPD-000047	D5-470	TM5Q5	GPIK-470	UC-5447	5GA-Q47	
C10	1.5		520720	SU.5NP0	TCZ-1.5		GPIK-1R5		5TCB-V15	
C11	1000		520735	BPD-001	DD-102	TM5D1	801-001	DC-521	5SK-D1	
C12	47		520719	BPD-000047	D5-470	TM5Q5	GPIK-470	UC-5447	5GA-Q47	
C13	.5-3		507968		839-3			C756SA		
C14	10		520718	SU0N750	TCN-10		N750K-100	MT-561	5TCU-Q1	
C15	5		520717	SI5NP0	TCZ-5		NP0K-050	ZT-555	5TCCB-V47	
C16	1000		520735	BPD-001	DD-102	TM5D1	801-001	DC-521	5SK-D1	
C17	6.8		520716	SI6.8NP0	TCZ-6.8		NP0K-6R8	ZT-5468	5TCCB-V68	
C18	120		513029	SI120	D6-121	TM5T12	GP2K-121	UC-5312	5GA-T12	
C19	82		513015	SI83	D6-820		GP2K-820		5GA-Q82	
C20	5000		513013	BPD-005	DD-502	TM5D5	811-005	DC-525	5SK-D5	
C21	5000		513013	BPD-005	DD-502	TM5D5	811-005	DC-525	5SK-D5	
C22	5000		513013	BPD-005	DD-502	TM5D5	811-005	DC-525	5SK-D5	
C23	82		513015	SI83	D6-820		GP2K-820		5GA-Q82	
C24	5000		513013	BPD-005	DD-502	TM5D5	811-005	DC-525	5SK-D5	
C25	5000		513013	BPD-005	DD-502	TM5D5	811-005	DC-525	5SK-D5	
C26	5000		513013	BPD-005	DD-502	TM5D5	811-005	DC-525	5SK-D5	
C27	82		513016	SI82	D6-820		GP2K-820		5GA-Q82	
C28	5000		513013	BPD-005	DD-502	TM5D5	811-005	DC-525	5SK-D5	
C29	5000		513013	BPD-005	DD-502	TM5D5	811-005	DC-525	5SK-D5	
C30	5000		513013	BPD-005	DD-502	TM5D5	811-005	DC-525	5SK-D5	
C31	.25	200	512045	P488-25			P2P25	PT4025	2TM-P25	
C32	.1	200	512033	P288-1	DF-104	P2P1		PT401	2TM-P1	
C33	5000		513013	BPD-005	DD-502	TM5D5	811-005	DC-525	5SK-D5	
C34	.22	400	512223	P488-22			PTE4P22	PT4022	2TM-P22	
C35	47		512438	SI47NP0	TCZ-47			ZT-5447	5TCC-Q47	
C36	.1	400	512035	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C37	.02	600	512019	P888-02	DF-203	PTE6S2		PT613	6TM-S2	
C38	.05	600	512031	P888-05	DF-503	PTE6S5		PT615	6TM-S5	
C39	2.2		513001		TCZ-2.2		NP0K-2R2		5TCCB-V22	
C40	47		513002	5947	D6-470	TM5Q5	GPIK-470	UC-5447	5GA-Q47	
C41	5000		513013	BPD-005	DD-502	TM5D5	811-005	DC-525	5SK-D5	
C42	5000		513013	BPD-005	DD-502	TM5D5	811-005	DC-525	5SK-D5	
C43	1500		513010	SU500	D6-152	TM5D15	GP2L-152	UC-5215	5SK-D15	
C44	1500		513010	SU500	D6-152	TM5D15	GP2L-152	UC-5215	5SK-D15	
C45	1500		513010	SU500	D6-152	TM5D15	GP2L-152	UC-5215	5SK-D15	
C46	.05	200	512027	P288-05	DF-503	PT2S5		PT415	2TM-S5	
C47	5000	600	512007	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C48	.005	600	512007	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C49	270		513006	SI270	D6-271		GP2K-271	UC-5237	5GA-T27	
C50	.01	400	512001	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C51	.01	200	512009	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C52	.005	600	512007	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C53	270		513006	SI270	D6-271		GP2K-271	UC-5237	5GA-T27	
C54	.01	600	512013	P888-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C55	.05	400	512029	P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C56A	.01			P888-01		PTE8S1		PT811		
B	2000		⊕508062	BPD-002	*DD-103	TM5D2	†821-01	DC-522	‡5HK-S1	
C	5000			BPD-005	PC-100	TM5D5	1405-01	DC-525	101C1	
D	5000			BPD-005				DC-525		

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Stewart-Warner PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C57	4700	500	512533	1484-005		IDB5D5		MCB465	MS-25	
C58	.02	400	512019	P488-02	DF-203	PTE4S2		PT412	4TM-S2	
C59	.05	800	512308	P688-05	DF-503	PTE6S5		PT615	6TM-S5	
C60	.1	500	512037	P888-1	DF-104	PTE8P1		PT801	8TM-P1	
C61	.05	800	512037	P888-05	DF-503	PTE6S5		PT615	6TM-S5	
C62	.001	800	512001	P888-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C63	.001	500	512001	P888-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C64	.01	200	512009	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C65	.05	800	512031	P888-05	DF-503	PTE6S5		PT615	6TM-S5	
C66	5000		513013	BPD-005	DD-502	TM5D5	811-005	DC-525	5SK-D5	
C67	.05	400	512027	P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C68	3900	500	512540	1464-004		IDB5D4		MCB463	MB-34	
C69	390	500	512535	1469-0004		5R5T4		MCB343	MB-34	
C70	.25	800	512049	884-25		PTE6P25		PT6025	6TM-P25	
C71	390	500	512535	1469-0004		5R5T4		MCB343	MB-34	
C72	1000	500	512515	1468-001	D6-103	IW5D1	GP2L-102	MC355	1F M-21	
C73	5.1	1500	513026					MCP550		
C74	.05	800	512031	P888-05	DF-503	PTE6S5		PT615	6TM-S5	
C75	.25	200	512045	P488-25		P2P25		PT4025	2TM-P25	
C76	.25	200	512045	P488-25		P2P25		PT4025	2TM-P25	
C77	.02	800	512019	P888-02	DF-203	PTE8S2		PT812	6TM-S2	
C78	56	1500	513027						20DK-T5	
C79	500	20000	508888	HV20C	TV3-502	MM-C20TS	413-501		20DK-T5	
C80	500	20000	508888	HV20C	TV3-502	MM-C20TS	413-501		20DK-T5	
C81	5000		513013	BPD-005	DD-502	TM5D5	811-005	DC-525	5SK-D5	
C82	.01	400	512255	⊕892GXY-01		PTE4S1		PT411	4TM-S1	
C83	.01	400	512255	⊕892GXY-01		PTE4S1		PT411	4TM-S1	
C84	5		513432	SI5NP0	TCZ-4.7			ZT-555	5TCCB-V47	
C85	82		513016	SI82	D6-820		GP1K-820		5GA-Q82	
C86	5		513432	SI5NP0	TCZ-4.7		NP0K-050	ZT-555	5TCCB-V47	

* Items C56A, C56B, C56C, C56D, R61A, R61B, R61C are combined in one unit.
* Install DD-103 in series with PC-100 input lead to replace original unit.
† Install 821-01 in series with 1405-01 input lead to replace original unit.
‡ Install 5HK-S1 in series with 101C1 input lead to replace original unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Stewart-Warner PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	750Ω	2	520292	QJ-341 *			WF751	Contrast-Wire Wound-Panel
B	1MEG	1					UR16-T25	Volume-Tapped ④ 200KΩ-Rear
C	Switch						US-26	Attach to R1B
R2A	500KΩ	1	520651	QU-133	AG-58-8	AB-59	U-50	Tone
B	Shaft		Not Req.	KS8-3	AK-4	Not Req.	Not Req.	Attach to R2A
R3A	2.5Meg	1	508893	QJ-223**	RTV-313		UF255L	Height-Panel
B	1Meg	1					UR16L	Vert. Hold- Rear
R4A	10KΩ	4	509302		RTV-341			Focus-Wire Wound-Panel
B	5000Ω	1						Vert. Linearity-Rear
R5A	100KΩ	1	520652	QU-128	AG-49-8	AB-40	SU-41	Brightness
B	Shaft		Not Req.	KS8-1/4	AK-1	Not Req.	Not Req.	Attach to R5A
R6A	30KΩ	1	520653	QU-121				Range Booster-Panel
B	30KΩ	1		MU-121				Range Booster- Rear

* CONCENTRIKIT EQUIVALENT - KIT K-3, BASE ELEMENTS & SHAFTS W17-105 & P3-131 (Panel) B13-137X & R1-226 (Rear) & SWITCH 78-1.
** CONCENTRIKIT EQUIVALENT- KIT K-2, BASE ELEMENTS & SHAFTS B11-239 & P1-112 (Panel) B11-137 & R1-115 (Rear).

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Stewart-Warner PART No.	IRC PART No.	NOTES
R7	15KΩ	1	510157	BTS-15K	
R8	47KΩ	1	510167	BTS-47K	
R9	100KΩ	1	510172	BTS-100K	
R10	160KΩ -5%	1	510774	BTS-160K-5%	
R11	1500Ω	1	510139	BTS- 1500	
R12	100KΩ -5%	1	510751	BTS-100K-5%	
R13	10KΩ	1	510154	BTS-10K	
R14	220KΩ	1	510179	BTS-220K	
R15	10KΩ	1	510154	BTS-10K	
R16	10KΩ	1	510154	BTS-10K	
R17	12KΩ -5%	1	510723		
R18	100KΩ	1	510116		
R19	390Ω	1	510129	BTS-390	
R20	8200Ω	1	510153		
R21	47Ω	1	510112		
R22	100Ω	1	510110	BTS-100	
R23	6800Ω	1	510151		Note 3
R24	100Ω	1	510110	BTS-100	
R25	100Ω	1	510110	BTS-100	
R26	100Ω	1	510110	BTS-100	
R27	18KΩ	1	510159	BTS-18K	
R28	8200Ω	1	510153	BTS-8200	
R29	560KΩ	1	510186	BTS-560K	
R30	1 Meg	1	510191	BTS-1 Meg	
R31	10KΩ	3	510354	BTS-10K	
R32	18KΩ	1	510159	BTS-18K	Note 1
R33	10KΩ	1	510154	BTS-10K	
R34	4000Ω	5	510753	1.5/4A-4000	
R35	470KΩ	1	510184	BTS-470K	
R36	470KΩ	1	510184	BTS-470K	
R37	22KΩ	1	510160	BTS-22K	
R38	2200Ω	1	510142	BTS-2200	
R39	18KΩ	1	510159	BTS-18K	
R40	470KΩ	1	510184		
R41	82Ω	1	510117	BTS-82	
R42	4700Ω	1	510249	BTA-4700	
R43	220Ω	1	510124	BTS-220	
R44	18KΩ	1	510159	BTS-18K	
R45	220Ω	1	510124	BTS-220	
R46	22KΩ	1	510160	BTS-22K	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Stewart-Warner PART No.	IRC PART No.	NOTES
R47	68KΩ	1	510170	BTS-68K	
R48	10Meg	1	510197	BTS-10Meg	
R49	470KΩ	1	510184	BTS-470K	
R50	680KΩ 5%	1	510746	BTS-680K-5%	
R51	820KΩ 5%	1	510747	BTS-820K-5%	
R52	270KΩ	1	510180	BTS-270K	
R53	2.2Meg	1	510193	BTS-2.2Meg	
R54	68KΩ	1	510170	BTS-68K	
R55	270KΩ	1	510180	BTS-270K	
R56	680KΩ	1	510187	BTS-680K	
R57	3900Ω 5%	1	510748	BTS-3900-5%	
R58	680Ω	1	510151	BTS-6800	
R59	4700Ω 5%	1	510750	BTS-4700-5%	
R60	27KΩ	1	510162	BTS-27K	
R61A	22KΩ	1		BTS-22K	
B	8200Ω	1	⊕508062	BTS-8200	
C	8200Ω	1		BTS-8200	
R62	2Meg 5%	1	510769	BTS-2Meg-5%	Notes 2 & 4
R63	1.5Meg 5%	1	510767	BTS-1.5meg-5%	
R64	100KΩ	1	510166	BTS-100K	
R65	4.7Meg	1	510768	BTS-4.7Meg	
R66	6800Ω	1	510151	BTS-6800	
R67	2Meg	1			Note 6
R68	680Ω	1	510134	BTS-680	
R69	560Ω	1	510132	BTS-560	
R70	560Ω	1	510132	BTS-560	
R71	100KΩ 5%	1	510751	BTS-100K-5%	
R72	100KΩ 5%	1	510751	BTS-100K-5%	
R73	4.7Meg	1	510195	BTS-4.7Meg	
R74	27KΩ	1	510162	BTS-27K	
R75	470KΩ	1	510184	BTS-470K	
R76	3300Ω	1	510145	BTS-3300	
R77	1500Ω	1	510139	BTS-1500	
R78	100KΩ	1	510172	BTS-100K	
R79	270KΩ	1	510180	BTS-270K	
R80	680KΩ	1	510187	BTS-680K	
R81	4700Ω	2	510248	BTA-4700	
R82	15KΩ	2	510357	BTB-15K	
R83	470KΩ	1	510184	BTS-470K	
R84	68Ω	1	510116		

RESISTORS (CONT.)

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Stewart-Warner PART No.	IRC PART No.	NOTES
R85	100Ω	1	510218	BTA-100	
R86	12KΩ	5	510758	1-3/4A-12K	
R87	2700Ω	2	510344	BTB-2700	
R88	47KΩ	1		BTS-47K	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Stewart-Warner PART No.	IRC PART No.	NOTES
R89	1MEG	2	510390		
R90	600Ω	10	510741	1-3/4A-600	
R91	4000Ω	3	510733	1-3.4A-4000	
R92	220KΩ	1	510179	BTS-220K	

* Items R61A, R61B, R61C, C56A, C56B, C56C, C56D are combined in one unit.
Note 1. Chassis containing an "A" in series designation use a 12KΩ resistor in this application.
Note 2. Chassis containing a "C" in series designation use a 1.5Meg resistor in this application.
Note 3. Chassis containing a "D" in series designation use a 4700Ω (5%) resistor in this application.
Note 4. Chassis containing an "E" in series designation use a 1.5Meg resistor in this application.
Note 5. Chassis containing an "E" in series designation R65 is omitted.
Note 6. Some Models use a 2.2Meg resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: Stewart-Warner PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC	660VCT	5VAC	6.3VAC	530487		P-3078	TP-356	R-39BC
	① 1.86A	.250ADC	③ 3A	⑤ 8.7A					
				SEC. 4					
				6.3VAC					
				⑥ 1.12A					

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: Stewart-Warner PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No	NOTES
T2	153Ω	940Ω	508076	A-8125	A-3000 ⑦	TRO-1 ⑦	A-97X	Vert. Osc. Trans.
T3	311Ω tap ④ 361Ω	47Ω tap ④ .41Ω,3.2Ω	511116	A-8130 ⑤	HVO-7 ⑤	TFB-5 ⑤	D-14 ⑤	Horiz. Output Trans.
		SEC. 2 0Ω						
T4	800Ω tap ⑨ 9Ω		509375	A-8123 ①	A-3037	TSO-5 ⑨	A-102X	Vert. Output Trans.
T5A	16Ω		115228 ③	DY-9	MDF-70 10	TY-3	Y-17 11	Horiz. Deflection Coils
B	48Ω							Vert. Deflection Coils
T6	12KΩ		162326 ③					Focus Coil

① Drill one new mounting hole.
② Mount on top of chassis.
③ Use with Width Coil WC-5.
④ Use with Width Coil MWC-1.
⑤ Drill new mounting holes.
⑥ Use Width Coil (with AGC winding) with approx. 4-29 Milliheary range.
⑦ Use with Width Coil WC-11.
⑧ Connect as Auto Trans.
⑨ Includes cable & plug.
10 Disconnect MDF-70 shunting resistors & capacitor.
11 Disconnect Y-17 shunting resistors & capacitor.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES PRI.	RATING: DC RES SEC.	REPLACEMENT DATA: Stewart-Warner PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T7	4.3KΩ	3Ω	450Ω	.9Ω	509376	A-3877 ②	A-2930	RO-8 ②	S-5X	① Alternate audio output.
					509378 ①					② Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS: SIZE	RATINGS: FIELD	RATINGS: V. C. IMP.	REPLACEMENT DATA: Stewart-Warner PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1	6 x 9"	PM	3Ω	508174	EP-810 Mod. P69-V	69A2	

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D.C. RESISTANCE	RATINGS: INDUCTANCE @ CURRENT 1000 ℃/s	REPLACEMENT DATA: Stewart-Warner PART No.	STANCOR PART No.	MERIT PART No	CHICAGO PART No	TRIAD PART No
L1	.250ADC	73Ω	2.9 Hy.	508341	C-2325	C-2991 ①	TR-3300	

① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: Stewart-Warner PART No.	MERIT PART No	NOTES
L2	Ant. Coil	0Ω	0Ω	520702		Channel 2
L3	Fil. Choke	0Ω		520518		
L4	Fil. Choke	0Ω		507384		
L5	Neutralizing Coil	0Ω		520701		
L6	RF, Mixer Grid & Osc. Coil	0Ω		520722		Channel 2
L7	Fil. Choke	0Ω		520520		
L8	RF Choke	0Ω		520714		
L9	Ist. Video IF	.9Ω		520734	TV-103 *	Includes slug, part #509063
L10	RF Choke	1.3Ω		520715		
L11	Fil. Choke	0Ω		507584		
L12	2nd. Video IF	.1Ω		507343	TV-103 *	Less slug part #507357
L13	Fil. Choke	0Ω		507584		

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PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA Stewart-Warner PART No.	REPLACEMENT DATA MERIT PART No.	NOTES
L14	RF Choke	2.2Ω		507367		
L15	3rd. Video IF	.1Ω		507343	TV-102 *	Less slug, part #507357
L16	Fil. Choke	0Ω		507584		
L17	4th. Video IF	.1Ω		507343	TV-103 *	Less slug, part #507357
L18	RF Choke	2.2Ω		507367		
L19	Series Peaking Coil	16Ω		509340	TV-188	580 Microhenries
L20	Shunt Peaking Coil	6.5Ω		509342	TV-188	394 Microhenries
L21	4.5MC Trap	1.8Ω		509603	TV-151	Includes slug, part #507357
L22	Series Peaking Coil	9.5Ω		520689 ‡	TV-185	
L23	Shunt Peaking Coil	6.5Ω		509340 ▲	TV-188	
L24	Sound IF	1.4Ω		509378		
L25	Ratio Det.	3.8Ω	.7Ω CT	509706	TV-115 ■	Tertiary Winding - .45Ω
L26	Horiz. Osc.	85Ω		508967	TV-163	Includes slug, part #508963
L27	Width Coil	1.3Ω		509361	MWC-2	Includes slug, part #507429

* Enlarge mounting hole.
■ Use adaptor plate.
‡ Chassis containing an "A" in series designation use part #509341 in this application.
▲ Chassis containing an "A" in series designation use part #509342 in this application.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA Stewart-Warner PART No. FUSE	Stewart-Warner PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M1	3AG (P/T)	1A 250V	509517		318001		GJV-1	
M2	3AG (P/T)	1/4A 250V	508063		318.250		GJV-1/4	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA Stewart-Warner PART No.		NOTES
M3	Bayonet	6-8	.15	Brown	118921		Type #47

MISCELLANEOUS

ITEM No.	PART NAME	Stewart-Warner PART No.	NOTES
M4	RF Tuner	520645	Complete
M5	Crystal	509386	Video Detector (1N64)
M6	Switch	520563	Phono-TV Selector (DPDT Slide)
M7	Ion Trap	509688	
	Trimmer	520127	Horiz. Drive 25-280MMF
	Cabinet	520670-A	Mahogany, Models 9210-C, 21C-9210C
	Cabinet	520650-A	Mahogany, Model 21T-9210A
	Safety Glass	520494	Models 9210-C, 21C-9210C
	Safety Glass	520476	Model 21T-9210A
	Mask	520495-A	Model 9210-C (†)
	Mask	520475-B	Model 21T-9210A (‡)
	Mask	520495-B	Model 21C-9210C (♦)
	Knob	509016	Channel Selector
	Knob	509017	Fine Tuning
	Knob	509018	Off/On Volume
	Knob	509019	Contrast
	Ant. Coil	520703	Channel 3
	Ant. Coil	520704	Channel 4
	Ant. Coil	520705	Channel 5
	Ant. Coil	520706	Channel 6
	Ant. Coil	520707	Channel 7
	Ant. Coil	520708	Channel 8
	Ant. Coil	520709	Channel 9
	Ant. Coil	520710	Channel 10
	Ant. Coils	520711	Channel 11
	Ant. Coils	520712	Channel 12
	Ant. Coils	520713	Channel 13
	RF, Mixer Grid & Osc. Coil	520723	Channel 3
	RF, Mixer Grid & Osc. Coil	520724	Channel 4
	RF, Mixer Grid & Osc. Coil	520725	Channel 5
	RF, Mixer Grid & Osc. Coil	520726	Channel 6
	RF, Mixer Grid & Osc. Coil	520727	Channel 7
	RF, Mixer Grid & Osc. Coil	520728	Channel 8
	RF, Mixer Grid & Osc. Coil	520729	Channel 9
	RF, Mixer Grid & Osc. Coil	520730	Channel 10
	RF, Mixer Grid & Osc. Coil	520731	Channel 11
	RF, Mixer Grid & Osc. Coil	520732	Channel 12
	RF, Mixer Grid & Osc. Coil	520733	Channel 13

† MODEL 9210-C, using Chassis containing "B" in series designation, uses part 520833-A.
‡ Model 21T-9210-A using Chassis containing "B" in series designation, uses part 520834-A.
♦ Model 21C-9210-C using Chassis containing "B" in series designation, uses part 520833-A.

TROUBLE SHOOTING AIDS — CONT.

AUDIO

WEAK OR NO SOUND

Substitute V8, V9 and V10. Check circuit acomponents. Check alignment of sound and video IF.

BUZZ

Adjust discriminator secondary for minimum buzz. Substitute V9. Check local oscillator setting. Check for overload at waveform W1. If overloading exists, check AGC network.

DISTORTED

Check audio stages using audio signal generator;

If not distorted,	If distorted,
Check alignment of sound IF and discriminator.	Substitute V9 and V10. Check associated components.

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HIGH VOLTAGE

LOSS OF HIGH VOLTAGE

Check waveform W13;

If not satisfactory,	If satisfactory,
Substitute V14. Check associated components. Check C76 for open.	Substitute V15, V16 and V17. Check fuse in horizontal output primary. Check T3, L27 and other components. of circuit.

WEAK HIGH VOLTAGE

If substitution of V14, V15 and V17 does not correct trouble, follow procedure outlined under loss of high voltage.

BLOOMING

If substitution of V14, V15, V17 and V18 does not correct the trouble, follow procedure outlined under loss of high voltage. Check R89 particularly.

POWER

SMALL RASTER AND WEAK SOUND

Substitute V18. Check filter components. Check B plus circuit for short.

DIM PICTURE

Substitute V18 and check B plus components.

GENERAL

NO SOUND, NO PICTURE, NO SNOW

Substitute V2, V3, V4, V5, V6 and V7. Check associated components.

SNOW BUT NO PICTURE OR SOUND

Substitute V1 and V2. Check associated components.

SNOWY PICTURE, GOOD SOUND (IN STRONG SIGNAL AREAS)

Check video IF tubes and components.

INTERMITTENT STREAKS

Check high voltage circuit for corona leakage and arcing.

PHOTOFACT* Folder

*TRADE MARK

RTMA MEMBER RADIO-TELEVISION MANUFACTURERS ASSOCIATION

SYLVANIA MODELS 172K, KU, 172M, MU, 175B, BU, L, M, MU, 176B, BU, L, M, MU, 177B, BU, M, MU, 178B, BU, M, MU (Ch. 1-508-1, 1-508-2)

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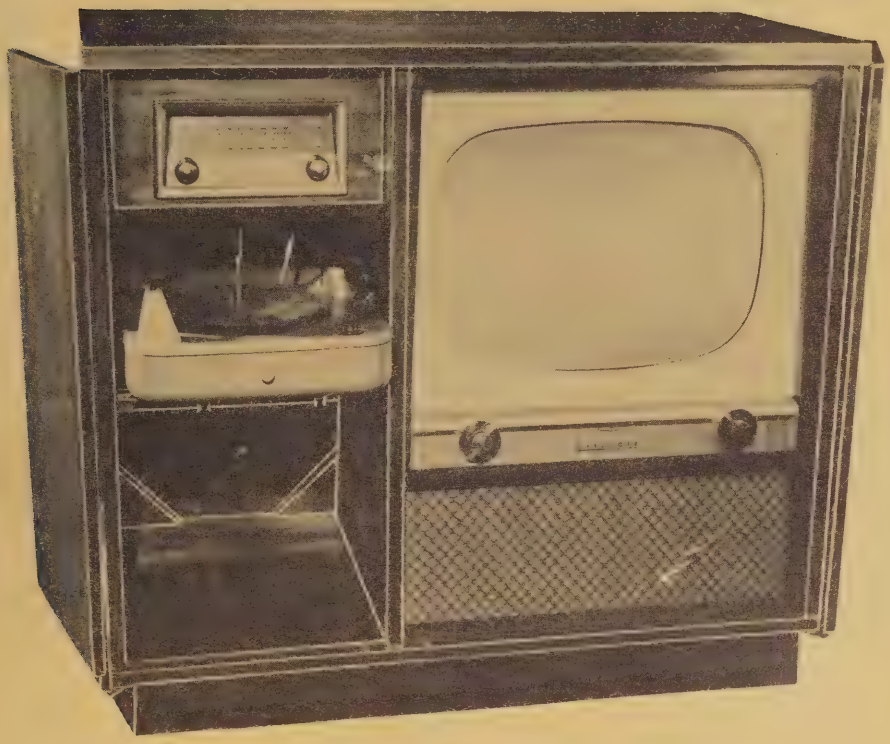

MODEL 178MU

SYLVANIA MODELS 172K, KU, 172M, MU, 175B, BU, L, M, MU, 176B, BU, L, M, MU, 177B, BU, M, MU, 178B, BU, M, MU (Ch. 1-508-1, 1-508-2)

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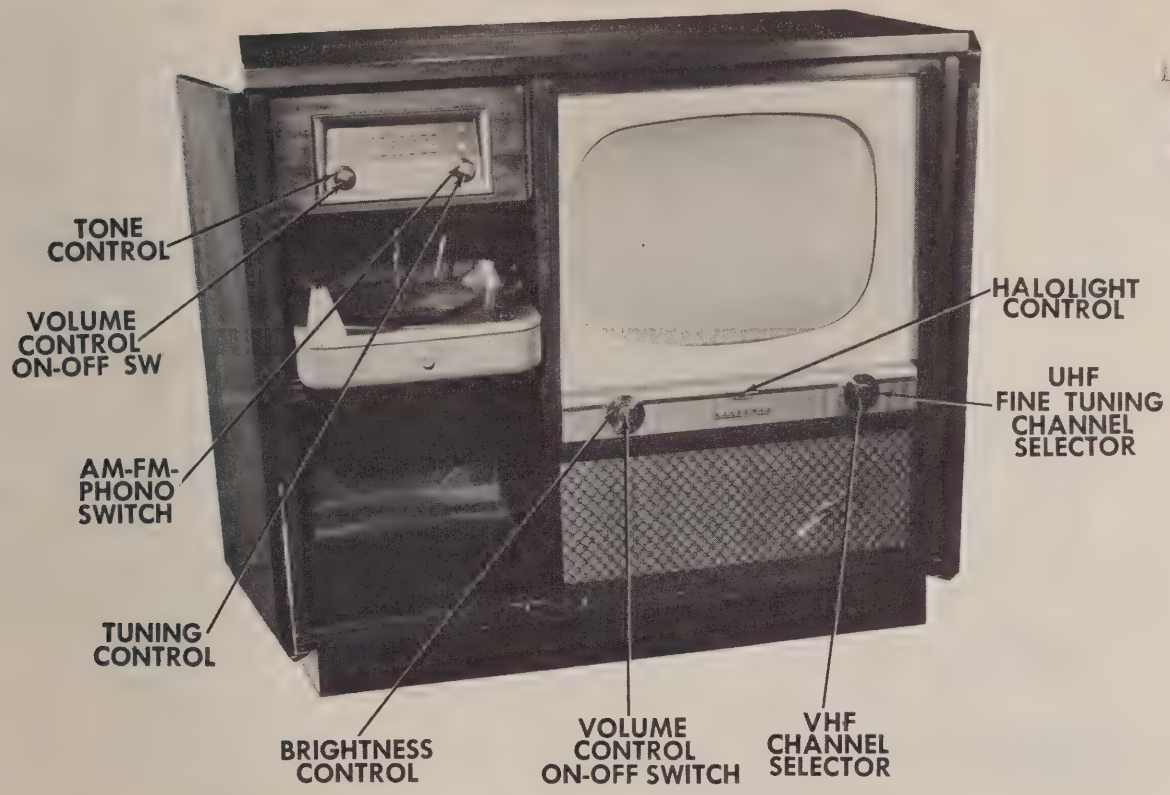

SYLVANIA MODELS 172K, KU, 172M, MU, 175B, BU, L, M, MU, 176B, BU, L, M, MU, 177B, BU, M, MU, 178B, BU, M, MU (Ch. 1-508-1, 1-508-2)

SYLVANIA MODEL 178MU (Ch. 1-508-2)

TRADE NAME	Sylvania Models 172K, KU, M, MU, 175B, BU, L, M, MU, 176B, BU, L, M, MU, 177B, BU, M, MU, 178B, BU, M, MU, (Ch. 1-508-1, 1-508-2).
MANUFACTURER	Sylvania Electric Prod., Inc., Radio & Tel. Div., 254 Rano St., Buffalo, New York.
TYPE SET	TV-FM-AM Phono Combination Receiver
TUBES	Thirty-Six
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING 2.1 Amp @ 117 Volts AC
TUNING RANGE–	TV Channels 2 thru 13 (VHF), 14 thru 83 (UHF), FM 88-108 MC, AM 540-1600KC Video IF 45.75MC, TV Sound IF 41.25MC (Inter carrier) FM IF 10.7MC, AM IF 455KC.

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For service information on record changer, see V-M Model 950, Photofact Set 107, Folder 13, also, Supplement Set 131, Folder 17, or Record Changer Manual CM-3.

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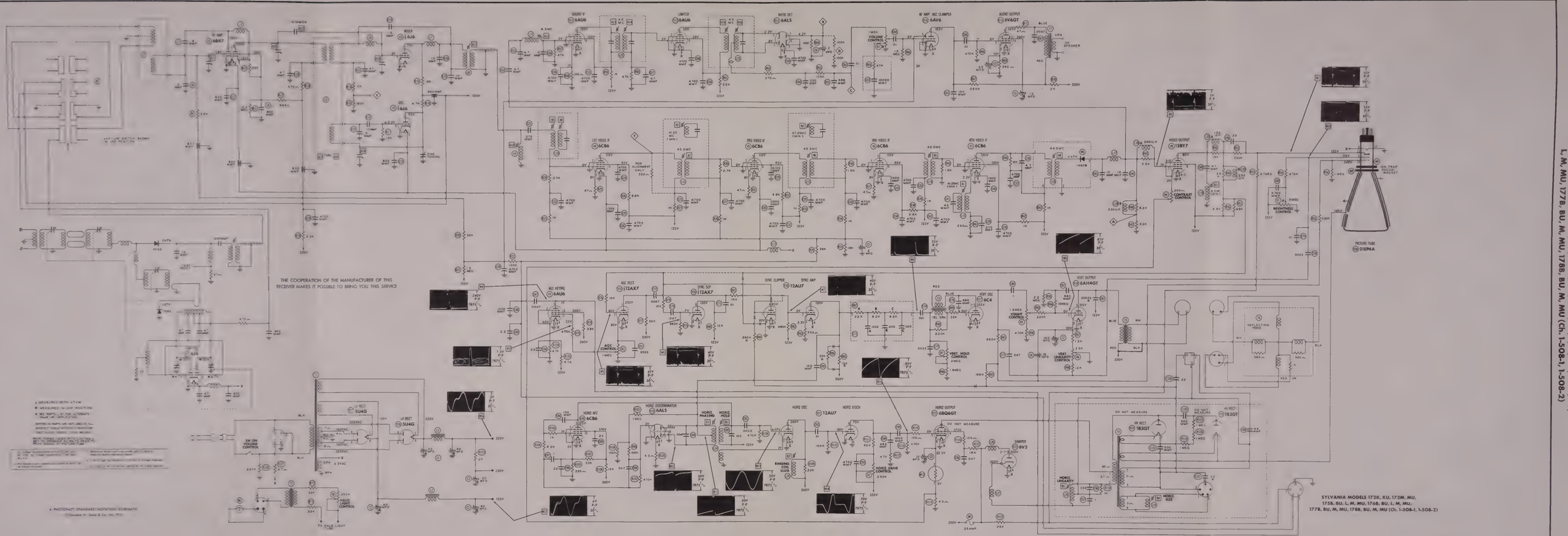
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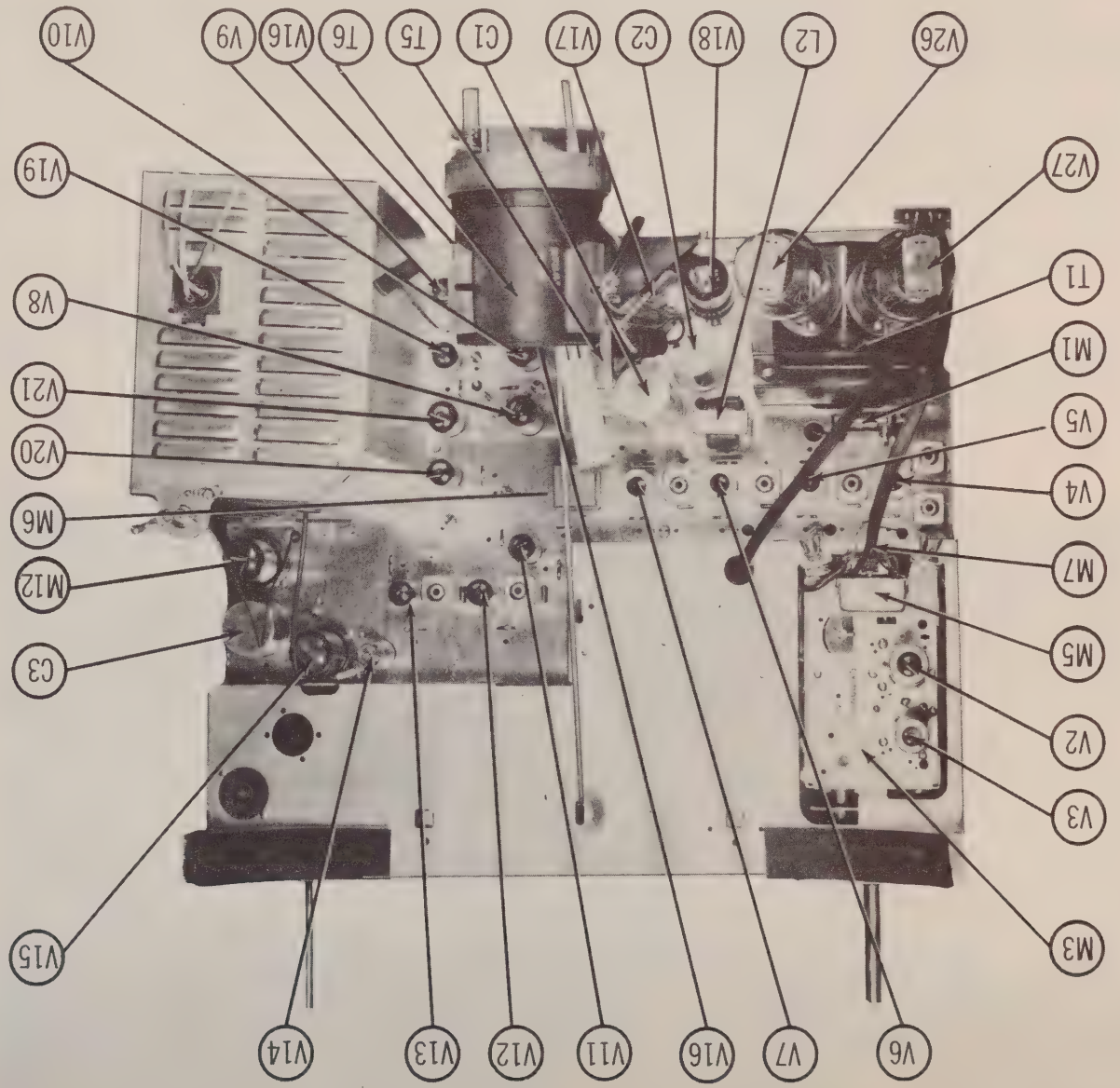
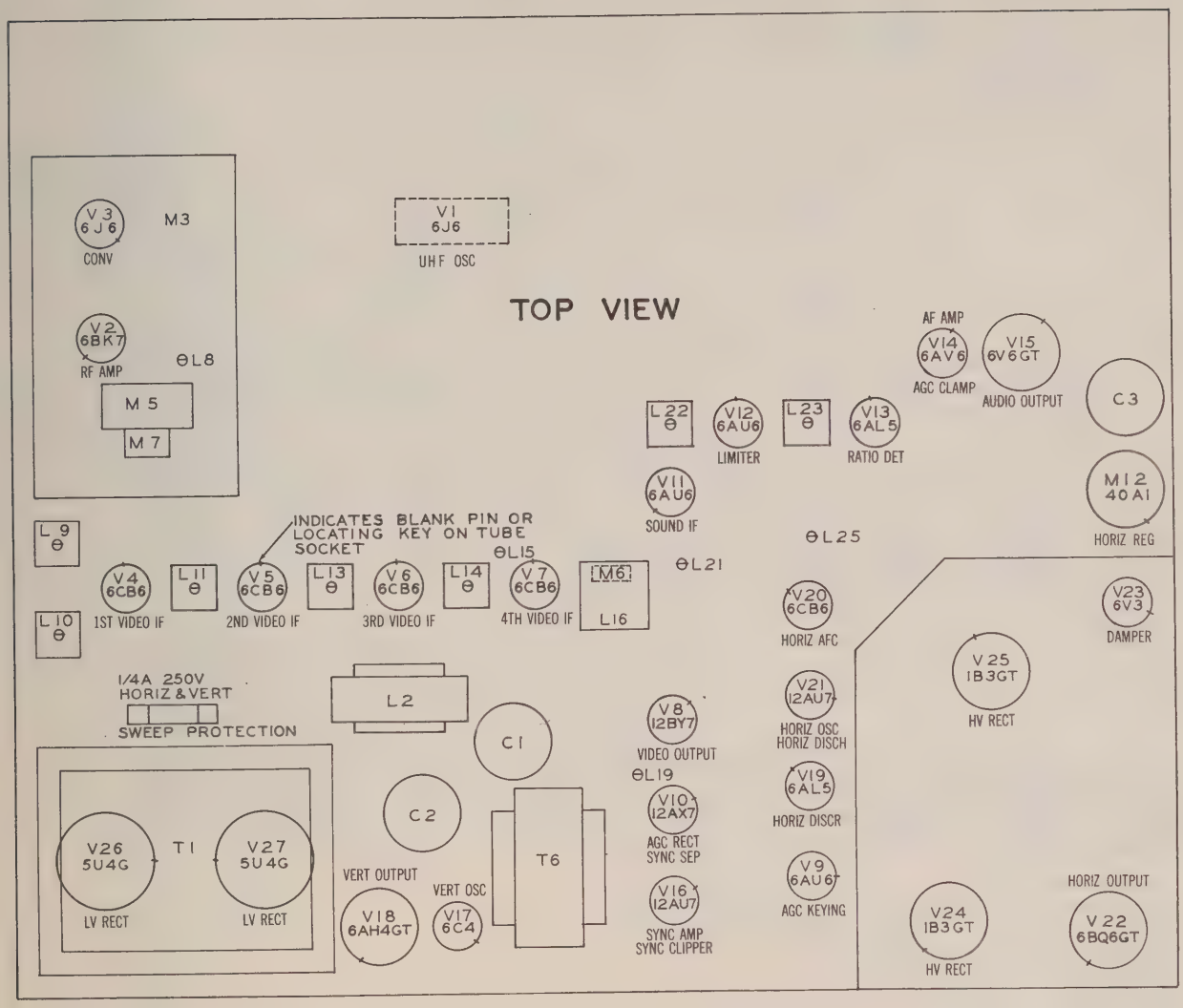
TV CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound -V27, CV28

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster -V3, V4, V5, V6, V7 (V1, UHF only)
No pic, no sound, has snow -V2, V3, V4
No pic, has sound, has raster -V8, V29
Has pic, no sound -V11, V12, V13, V14, V15
Overloaded picture -V9, V10, V14

SYNC FAILURE
No vert. sync -V16, V17
No horiz. sync -V16, V19, V20, V21
No vert. or horiz. sync -V10, V16

SWEEP FAILURE
No raster, has sound -V21, V22, V23, V24, V25, V26, V29 Fuse (M1)
No vertical deflection -V18
Poor vert. linearity or foldover -V17, V18
Poor horiz. linearity or foldover -V21, V22, V23, V24
Narrow picture -V21, V22, V23, V24, V25, V26, V27, V28
Vert. off freq. -V16, V17
Horiz. off freq. -V16, V19, V20, V21

TV ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard can be eliminated by removing the horizontal oscillator tube (V21).

VIDEO IF ALIGNMENT

Remove the converter tube (V3) and replace with a 6J8 which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications.
Connect the negative lead of a 12 volt bias source to the ungrounded side of C49. Connect the positive lead to chassis.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	Not used	39.75MC	Any	Use VTVM. DC probe to point (A). Common to chassis.	A8	Adjust for MINIMUM deflection.
2.	.001MFD	High side to pin 1 (Grid) of 6CB6 (V4).	"	41.25MC	"	"	A1	"
3.				47.25MC			A2	"
4.				41.25MC			A3	"
5.	"	"	"	44.0MC	"	"	A4	Adjust for maximum deflection. Attenuate generator to maintain 1 to 2 volts at VTVM.
6.				42.0Mc			A5	"
7.	"	"	"	45.2MC	"	"	A6	"
8.	"	"	"	43.2MC	"	"	A7	"
9.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	44.25MC (10MC Swp)	41.25MC 42.1MC 45.0MC 45.75MC 47.25MC	"	Vert. Amp. thru 33KΩ to point (A). Low side to chassis.	A9, A10, A11	Adjust for maximum flat-topped response with band width and marker placement similar to Fig. 1. If necessary, retouch A4, A5, A6 and A7 for desired response.

SOUND IF ALIGNMENT

Connect two matched 100KΩ (±1%) resistors in series from point (D) to chassis. The junction of these two resistors is alignment point (D) as shown on the schematic.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10.	100Ω Resistors	High side to pin 1 (grid) of 6CB6 (V4). Low side to chassis.	45MC (10MC Swp)	4.5MC (Use crystal marker if available)	Any	DC probe to ungrounded side of R60. Common to chassis.	A12, A13 A14	Adjust for maximum deflection.
11.	"	"	"	"	"	DC probe to point (D). Common to chassis.	A15	Adjust for maximum deflection. Attenuate generator to maintain not more than 1 volt at VTVM.
12.	"	"	"	"	"	DC probe to point (D). Common to point (D).	A16	Adjust for zero reading. A positive and negative reading will be obtained on either side of correct setting.

4.5MC TRAP ALIGNMENT

Short pin 1 of 6CB6 (V7) to chassis using as short a lead as possible.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
13.	.001MFD	High side to pin 2 (grid) of 12BY7 (V8). Low side to chassis.	4.5MC	Any	DC probe thru detector (Fig. 2) to pin 11 of picture tube. Common to chassis.	A17	Adjust for MINIMUM deflection.

VHF TUNER ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
Remove the second video IF tube (V5) from its socket.
Disconnect the primary winding of L11 from pin 5 of 6CB6 (V4) and connect a 330 ohm resistor from the B+ end of L11 to pin 5 of V4.
During alignment the use of two marker generators is required. Generator #1 (F) connected through a 2 or 3MMF capacitor to the grid of Video IF amplifier, V4.
Marker generator #2 (RF) is connected through a 2 or 3MMF capacitor across the sweep generator at the antenna terminals. If the sweep generator has a built-in marker it will be used for marker #2.
Since during tuner alignment it is necessary to switch the oscilloscope vertical input between the detector circuit connected to pin 5 of V4 (alignment point (D)) and the 10KΩ resistor connected to alignment point (C), it is recommended that a single pole, double throw switch mounted as closely as possible to the oscilloscope vertical input terminals, be used to switch the oscilloscope input.
All connecting leads should be shielded and kept as short as possible.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
14.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	69MC (10MC Swp)	67.25MC 71.75MC	4	Vert. Amp. thru 10KΩ to point (C). Low side to chassis.	A19, A20, A21, A22	Adjust for response curve within limits of Fig. 3. Adjustment of A22 is made by changing position of wire loop near A19.
15.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"	A22	Adjust for response similar to Fig. 3. If band width is too narrow move C10 and C11 apart.
16.	"	"	69MC (10MC Swp)	67.25MC 71.75MC	4	"	A21	Adjust for symmetrical response.
17.	Direct	High side to pin 5 (grid) of 6J6 (V3). Low side to chassis.	43.25MC (10MC Swp)	42.1MC 45.75MC	Set tuner between any two channels	Vert. Amp. thru detector (Fig. 4) to point (D). Low side to chassis.	A11, A9, A10	Adjust for symmetrical over coupled double peaked response curve with markers on peaks. A11 and A9 determine position of 45.75MC marker. A10 determines band width or position of 42.1MC marker.
18.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	69MC (10MC Swp)	71.75MC	4	"	A18	Set IF marker generator at 45.75MC. Adjust to make 45.75MC marker and RF video marker coincide on response curve. If A18 will not track properly adjust A25.

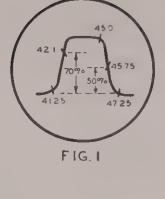


FIG. 1

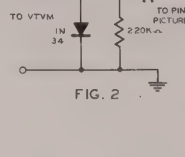


FIG. 2

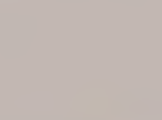


FIG. 3

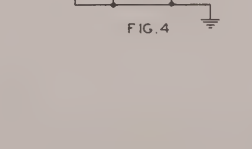


FIG. 4

TV ALIGNMENT INSTRUCTIONS (CONT.)

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
19.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	57MC (10MC Swp)	55.25MC 59.75MC	2	Vert. amp. thru detector (Fig. 4) to point (D). Low side to chassis.	A23	Set IF marker to 45.75MC for entire step. Adjust to make 45.75MC marker and RF video marker coincide on response curve. Check for response similar to Fig. 3. If necessary retouch A18, A19, A20 and A21, slightly for value of compromise on all channels. (A channels 7, 8 or 13 show deep valley adjust turns spacing at L17, L18) If this does not correct condition replace 6J6 (V3). It will then be necessary to repeat steps 14 thru 17.
			63MC (10MC Swp)	61.25MC 65.75MC	3		A24	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A25	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A26	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A27	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A28	
			183Mc (10MC Swp)	181.25MC 185.75MC	8		A29	
			189MC (10Mc Swp)	187.25MC 191.75Mc	9		A30	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A31	
			201Mc (10MC Swp)	199.25MC 203.75MC	11		A32	
			207MC (10MC Swp)	205.25MC 209.75MC	12		A33	
			213MC (10MC Swp)	211.25MC 215.75MC	13		A34	

UHF TUNER ALIGNMENT

The UHF tuner portion of this receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be attempted in the field.

RADIO ALIGNMENT INSTRUCTIONS

AM ALIGNMENT

Turn tuning gang fully open and set pointer 3-1/8 inches from right hand end of dial back plate.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.
Use an insulated alignment screwdriver for adjusting.
Turn tone control to extreme counter clockwise position.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
20.	.1MFD	High side to pin 7 (grid) of 6BE6 (V3). Low side to chassis.	455KC (400~ Mod)	AM	Tuning gang fully open	Across voice coil	A35, A36, A37, A38	Adjust for maximum output.
21.		Loop	1650KC	"	"	"	A39	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
22.		"	1400 KC	"	Tune to 1400KC signal	"	A40	"

FM IF ALIGNMENT

Use frequency modulated signal with 80% modulation and 450KC sweep. Use 120~ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
23.	.1MFD	High side to pin 7 (grid) of 6BE6 (V3). Low side to chassis.	10.7MC (450KC Swp)	FM	Tuning gang fully open	Vert. Amp. to point (D). Low side to chassis.	A41, A42, A43, A44, A45	Disconnect stabilizing capacitor C105. Adjust for curve of maximum amplitude and symmetry as in Fig. 5.
24.	"	"	"	"	"	Vert. Amp. to point (D). Low side to chassis.	A46	Reconnect capacitor C105. Adjust so that 10.7MC occurs at center of crossover lines as in Fig. 6. SLIGHTLY retouch A45 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

The signal generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
25.	Two 120Ω Carbon Resistors	Across FM antenna terminals with 120Ω in each lead.	108.5MC	FM	Tuning gang fully open	DC probe to point (D). Common to chassis.	A47	Adjust for maximum deflection.
26.		"	108MC	"	108MC	"	A48	
27.	"	"	88.5MC	"	Tuning gang fully closed	"	L42	Compress or expand for maximum deflection.
28.	"	"	88.0MC	"	88MC	"	L41	"

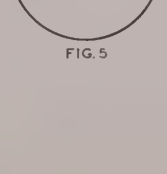


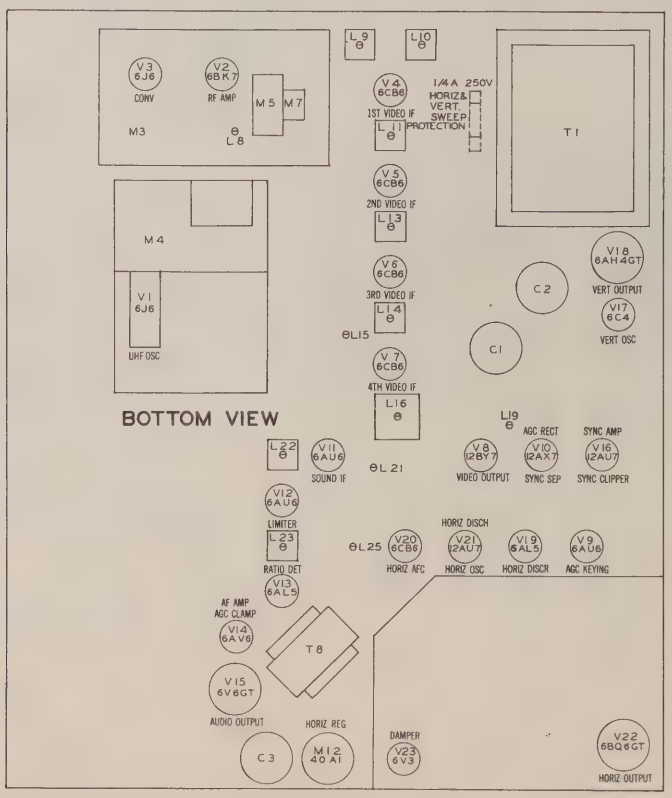
FIG. 5

FIG. 6

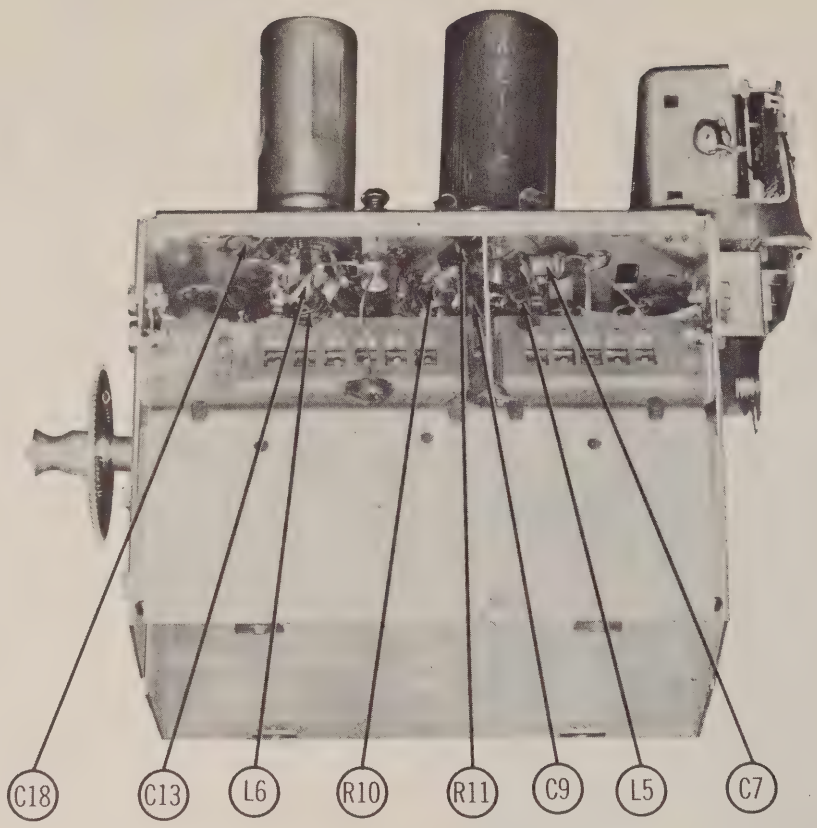
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	#527Ω	#527Ω	0Ω	.1Ω	10KΩ	10KΩ	0Ω		
V 2	6BK7	†1 Meg	234KΩ	0Ω	.1Ω	0Ω	†3.8KΩ	†1 Meg	†1 Meg	0Ω
V 3	6J6	#4.7KΩ	#10KΩ	.1Ω	0Ω	190 KΩ	10KΩ	0Ω		
V 4	6CB6	22KΩ	47Ω	0Ω	.1Ω	#1KΩ	#6.8KΩ	0Ω		
V 5	6CB6	19KΩ	47Ω	0Ω	.1Ω	#1KΩ	#6.8KΩ	0Ω		
V 6	6CB6	19KΩ	47Ω	0Ω	.1Ω	#1KΩ	#6.8KΩ	0Ω		
V 7	6CB6	.1Ω	330Ω	0Ω	.1Ω	#1KΩ	#1KΩ	0Ω		
V 8	12BY7	92Ω	3.3KΩ	92Ω	.1Ω	.1Ω	0Ω	#3.5KΩ	#57Ω	92Ω
V 9	6AU6	920 KΩ	4.7KΩ	0Ω	.1Ω	74 KΩ	†35KΩ	4.7KΩ		
V 10	12AX7	†35KΩ	■370KΩ	1 Meg	.1Ω	.1Ω	#12KΩ	680KΩ	0Ω	0Ω
V 11	6AU6	47KΩ	0Ω	.1Ω	0Ω	#1KΩ	#1KΩ	100Ω		
V 12	6AU6	47KΩ	0Ω	.1Ω	0Ω	#22KΩ	#22KΩ	0Ω		
V 13	6AL5	INF	INF	.1Ω	0Ω	0Ω	0Ω	68KΩ		
V 14	6AV6	15Meg	0Ω	0Ω	.1Ω	175KΩ	0Ω	†220KΩ		
V 15	6V6GT	0Ω	.1Ω	†2.6KΩ	†2KΩ	470KΩ	2.5KΩ	0Ω	390Ω	
V 16	12AU7	†10KΩ	#680KΩ	330Ω	.1Ω	.1Ω	■360KΩ	■360KΩ	#3.5KΩ	0Ω
V 17	6C4	■780KΩ	INF	0Ω	.1Ω	■780KΩ	2.6Meg	0Ω		
V 18	6AH4GT	1.6Meg	0Ω	1.8Meg	95KΩ	†920Ω	INF	.1Ω	2.1KΩ	
V 19	6AL5	0Ω	1.1Meg	.1Ω	1.9Ω	200KΩ	0Ω	1.1 Meg		
V 20	6CB6	680KΩ	330Ω	0Ω	.1Ω	#100Ω	†15KΩ	330Ω		
V 21	12AU7	†2.1KΩ	470KΩ	9.5Ω	0Ω	0Ω	†270KΩ	150KΩ	0Ω	.1Ω
V 22	6BQ6GT	INF	.1Ω	†270KΩ	†18KΩ	470KΩ	†18KΩ	0Ω	145Ω	Top Cap ■35Ω
V 23	6V3	INF	†23Ω	INF	.1Ω	0Ω	0Ω	†23Ω	Pin 8 Pin 9 INF †23Ω	Top Cap 70KΩ
V 24	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								Top Cap ■95Ω
V 25	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								Top Cap INF
V 26	5U4G	INF	48KΩ	INF	21.1Ω	INF	22.5Ω	INF	48KΩ	
V 27	5U4G	INF	9.4KΩ	INF	4.3Ω	INF	4.2Ω	INF	9.4KΩ	
V 28	21EP4A	.1Ω	565KΩ	Pin 10 ■310KΩ	Pin 11 #315KΩ	Pin 12 0Ω				

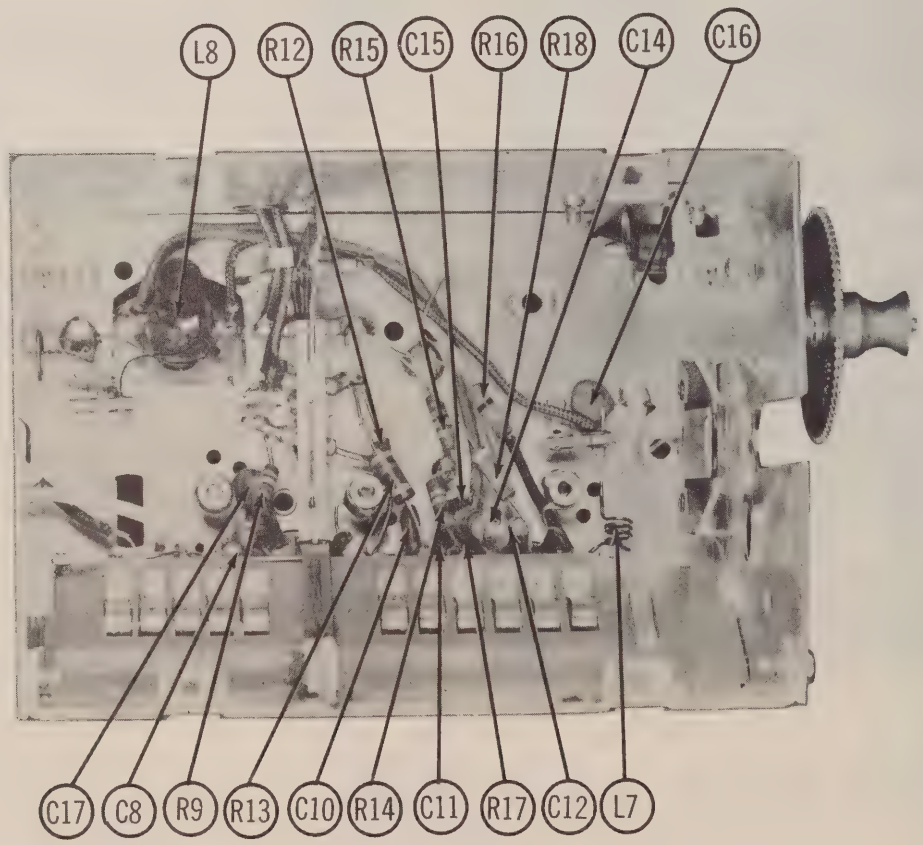
† MEASURED FROM PIN 8 OF V26.
# MEASURED FROM PIN 8 OF V27.
■ MEASURED FROM TOP CAP OF V23.



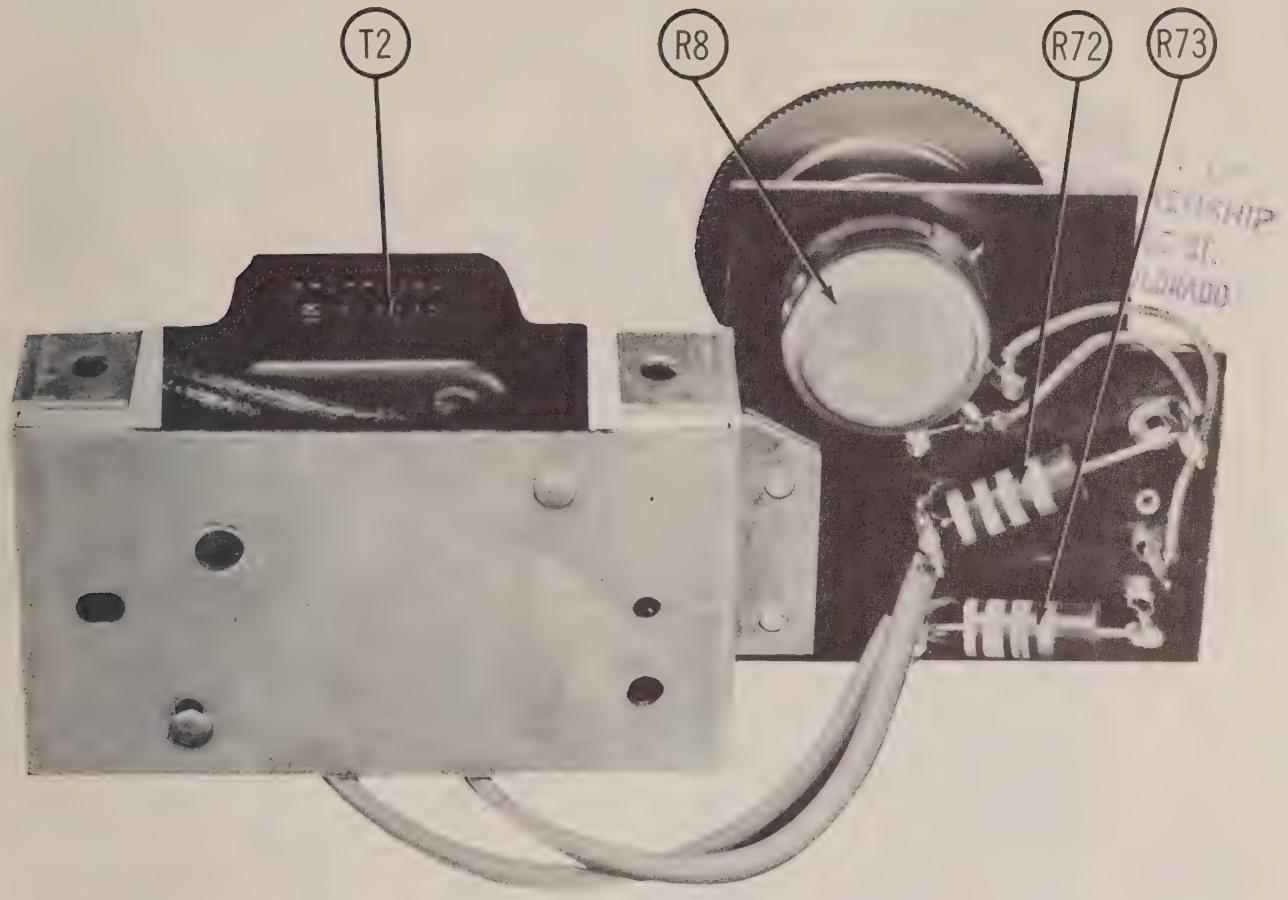
TUBE PLACEMENT CHART



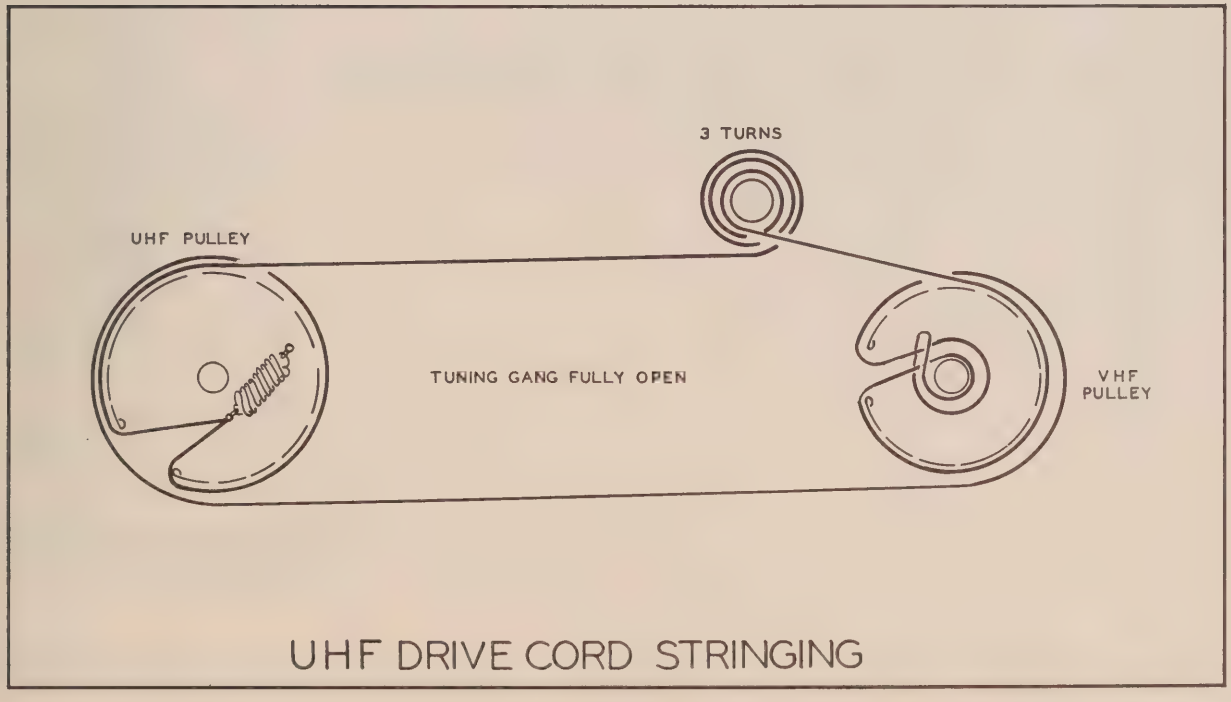
RF TUNER-RIGHT SIDE



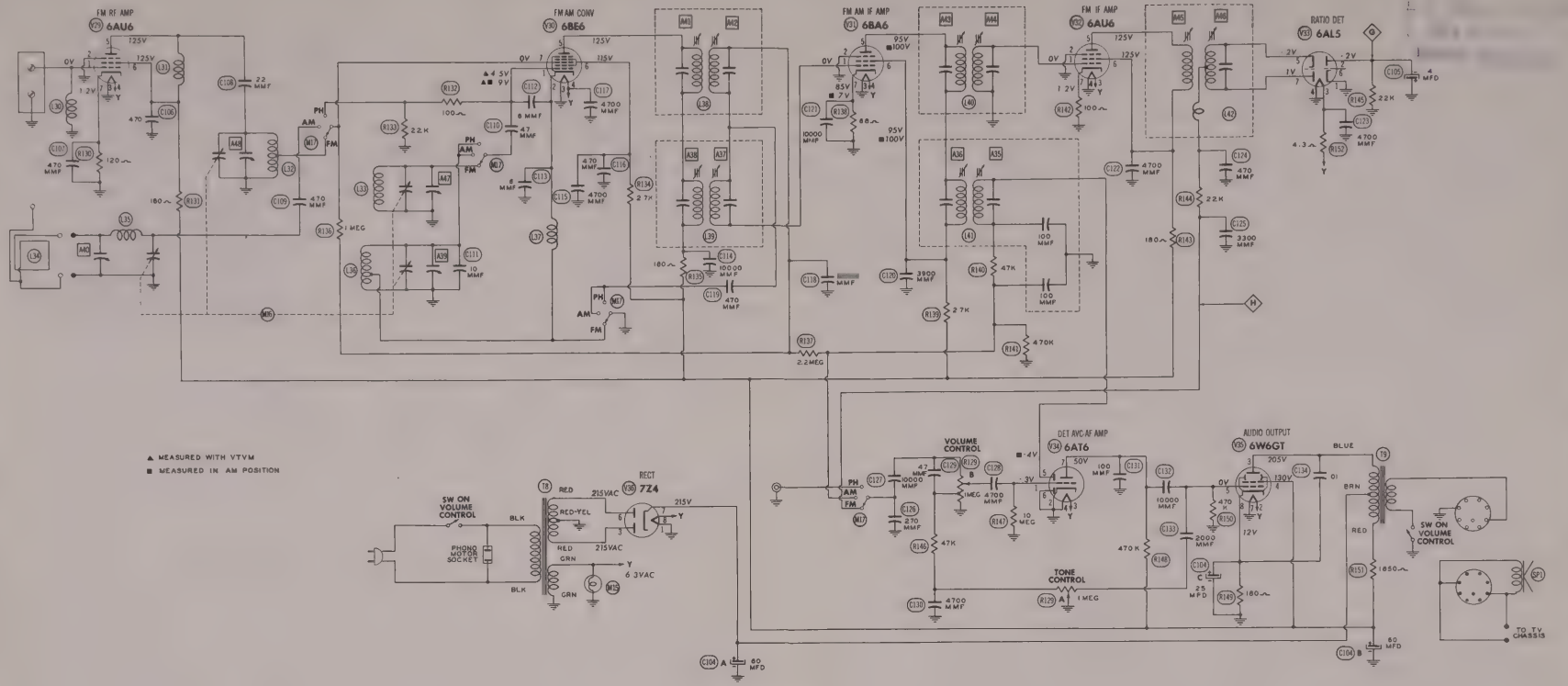
RF TUNER-BOTTOM VIEW



HALO LIGHT CONTROL UNIT



UHF DRIVE CORD STRINGING

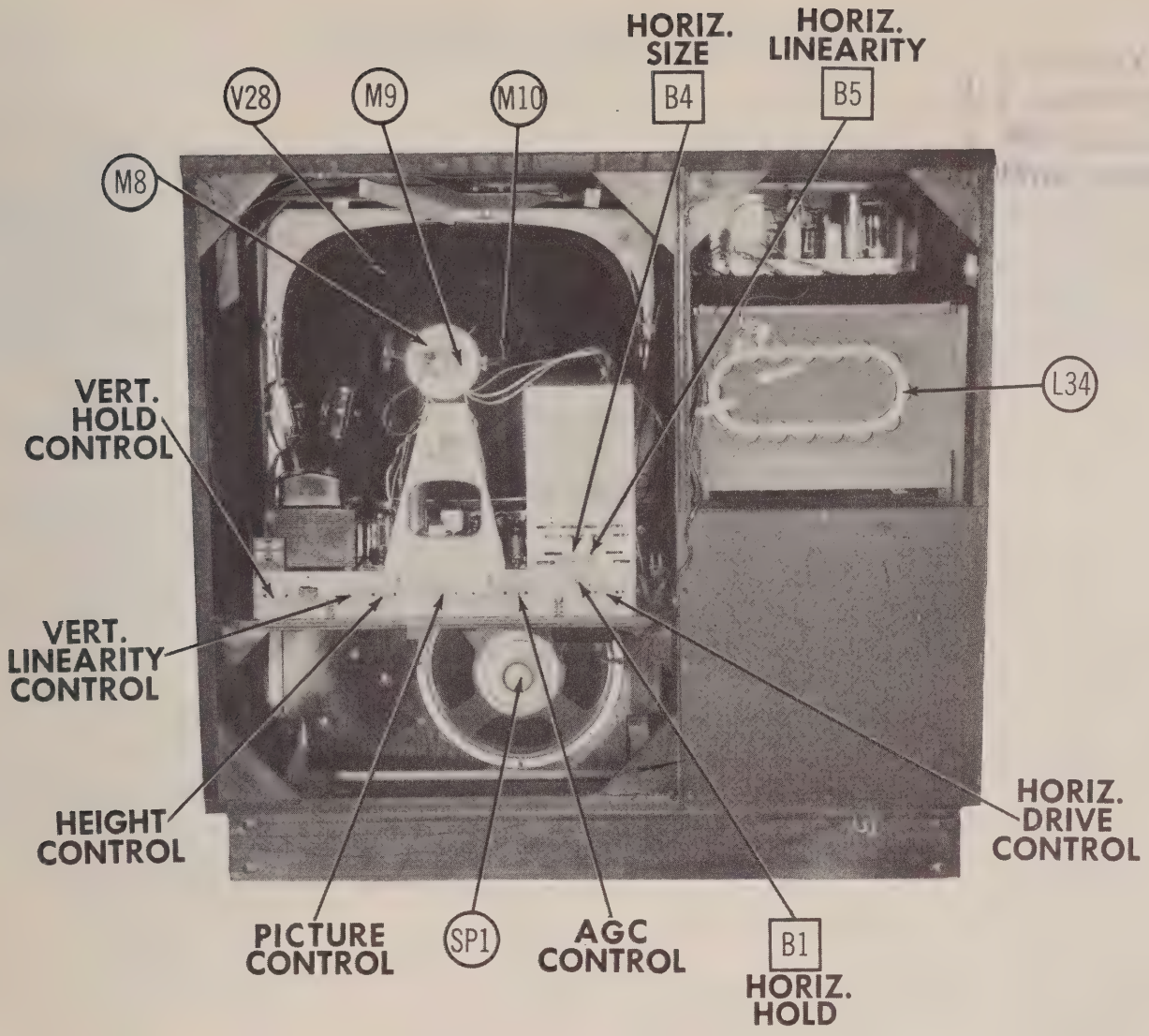


RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V29	6AU6	0Ω	0Ω	0Ω	.1Ω	†2KΩ	†2KΩ	120Ω	
V30	6BE6	22KΩ	0Ω	0Ω	.1ΩΩ	†2KΩ	†4.6KΩ	0Ω ■3.7Meg	
V31	6BA6	730KΩ ■2.7Meg	0Ω	0Ω	.1Ω	†4.6KΩ	†4.6KΩ	68Ω	
V32	6AU6	.2Ω	0Ω	.1Ω	0Ω	†2KΩ	†2KΩ	100Ω	
V33	6AL5	0Ω	22KΩ	.3Ω	0Ω	INF	INF	INF	
V34	6AT6	10 Meg	0Ω	.1Ω	0Ω	450KΩ ■517KΩ	0Ω	†470KΩ	
V35	6W6GT	INF	.1Ω	†305Ω	†1.8KΩ	470KΩ	INF ■470KΩ	0Ω	180Ω
V36	7Z4	0Ω	†2KΩ	78Ω	†1.8KΩ	†15 Ω	75Ω	2 Meg	.1Ω

ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE SPECIFIED
■ MEASURED IN "AM" POSITION
† MEASURED FROM PIN 7 OF V36.

RADIO SCHEMATIC



CABINET-REAR VIEW

DISASSEMBLY INSTRUCTIONS

① Chassis Removal (TV)

Remove 5 knobs from TV chassis.

Disconnect built-in VHF antenna.

Disconnect AC power plug.

Remove 7 wood screws. Remove rear cover.

Disconnect TV speaker cable.

Remove "Halo light" plug.

Loosen two lock nuts at top of picture tube mounting ring.

Remove 4 chassis bolts. Remove chassis.

② Chassis Removal (Radio)

Remove 4 knobs from radio chassis.

Disconnect AM loop antenna.

Disconnect built-in FM antenna.

Disconnect AC power plug.

Disconnect radio speaker cable.

Remove phono audio cable & phono motor cable.

Remove two chassis bolts. Remove chassis.

Remove 4 speaker nuts. Remove speaker.

③ PICTURE TUBE REMOVAL

To remove picture tube it is necessary to remove TV chassis.

④ PICTURE TUBE CLEANING

To clean picture tube & safety glass, TV chassis must be removed.

GENERAL DESCRIPTION

This chassis employs 29 tubes including the picture tube, plus one germanium diode.

This model includes an ultra high frequency tuner in addition to the VHF tuner. When the selector is switched to the UHF position, the VHF oscillator is disabled and the output of the UHF which is at the intermediate frequency is fed through the RF and bandpass stages of the VHF tuner for additional amplification. The UHF tuner is continuous tuning from channel 14 through 84.

The output of the VHF tuner is then fed through four stagger tuned stages of IF amplification. A crystal diode functions as the Video Detector. The video is then applied to one video amplifier before being applied to the picture tube.

Automatic gain control is produced by the AGC rectifier, amplified by the AGC amplifier and applied to the RF and IF amplifiers. The tuner AGC clamp prevents the tuner AGC line from going positive on weak signals.

The sync pulses are seperated from the video signal, amplified then clipped and applied to the horizontal discriminator and vertical integrater. The sync information from the vertical integrater is applied to the vertical oscillator. The oscillator then produces a peaked sawtooth wave in step with the vertical sync pulses from the station. This is applied to the vertical output tube which energizes the vertical deflection coils.

The horizontal sync pulses from the sync clipper are fed to the horizontal discriminator. A voltage from the horizontal osc. is also fed to the discriminator. The output of the discriminator is applied to the control tube which acts to hold the horizontal oscillator in sync with the incoming signal. The oscillator actuates the discharge tube through the ringing coil producing a peaked sawtooth wave. This drives the horizontal output tube which energizes the horizontal deflection coils.

TROUBLE SHOOTING AIDS

SWEEP

HORIZONTAL

LOSS OF SWEEP

Check waveform at W15;

If not satisfactory,	If satisfactory,
Substitute V21. Check associated circuit components.	Substitute V22, V23 and M12. Check associated components.

INSUFFICIENT SWEEP

Check setting of drive and horizontal width controls.

Check amplitude of waveform W15;

If not satisfactory,	If satisfactory,
Substitute V21. Check components.	Substitute V22 and V23. Check associated components.

DRIVE LINES

If drive control does not correct this trouble, substitute V22 and V24. Check C92.

COMPRESSED LEFT SIDE

Substitute V23. Check L28, C97, C98.

FOLDS

Substitute V23 and check C93.

XMAS TREE EFFECT

Substitute V21 and check components of oscillator circuit.

VERTICAL

LOSS OF SWEEP

Check waveform at W9;

If not satisfactory,	If satisfactory,
Substitute V16 and V17. Check associated circuit components.	Substitute V18 and check associated components.

INSUFFICIENT SWEEP

Check waveform at W9;

If not satisfactory,	If satisfactory,
Substitute V17 and check circuit components.	Substitute V18 and check circuit components.

COMPRESSED BOTTOM

Substitute V18. Check C2c and C77.

FOLDS

Substitute V17 and V18 . Check C76.

COMPRESSED AT TOP

Substitute V18. Check R97 and associated components.

SYNC

HORIZONTAL

LOSS OF SYNC

Check waveform at W13;

If not satisfactory,	If satisfactory,
Substitute V19 and V20. Check L24 and associated components.	Substitute V21 and check associated components.

CRITICAL HOLD

Substitute V20 and V21, if no change is noted, follow procedure outlined under horizontal loss of sync.

PULLING PICTURE

Substitute V19 and check associated components.

VERTICAL

LOSS OF SYNC

Check waveform at V8;

If not correct,	If correct,
Substitute V10 and V16. Check coupling network.	Substitute V17 and check associated components.

CRITICAL HOLD

Substitute V10, V16, and V17. Check circuit components.

TRIGGERING

Substitute V17 and V18. Check circuit components.

TROUBLE SHOOTING AIDS - CONT.

VIDEO

SOUND BARS

Check adjustments of the 4.5Meg trap. Check setting of local oscillator and alignment of IF stages.

POOR RESOLUTION

Check alignment of tuner and IF stages. Substitute V8 and check associated components.

POOR CONTRAST

Check waveform W2;

If not satisfactory,	If satisfactory,
Substitute V8, V9 and V10. Check associated components.	Check picture tube.

AUDIO

WEAK OR NO SOUND

Substitute V11, V12, V13, V14 and V15. Check L21 and C52.

BUZZ

Substitute V13. Check adjustment of ratio detector secondary slug for minimum buzz.

DISTORTED

Check audio stages using audio signal generator;

If not distorted.	If distorted,
Substitute V11, V12, V13. Check alignment of sound IF and discriminator.	Substitute V14 and V15, Check associated components.

POWER

SMALL RASTER, WEAK SOUND

Substitute V26 and V27. Check filter components. Check for short in B plus circuit.

DIM PICTURE

Follow procedure outlined under small raster, weak sound.

HIGH VOLTAGE

LOSS OF HIGH VOLTAGE

Check waveform W14;

If not satisfactory,	If satisfactory,
Substitute V20 and V21. Check associated components.	Check waveform W15.

Check waveform W15;

If not satisfactory,	If satisfactory,
Substitute V21 and check circuit components.	Substitute V22, V23, V24 and V25. Check associated components.

WEAK HIGH VOLTAGE

If substituting V21, V22, V23, and V24 does not correct trouble, follow procedure outlined under loss of high voltage.

BLOOMING

If substitution of V21, V22, V23, V24, V25, V26, V27, and V28.does not correct trouble, follow procedure outlined under loss of high voltage.

REMOVAL OF HIGH VOLTAGE SUB CHASSIS

Unplug deflection yoke from the top of the hi-voltage cage, the hi-voltage lead to anode of picture tube, the plate cap lead of the 6BQ6 and the cathode of the 6V3. Compress retaining spring holding the horizontal deflection coil receptical and slide receptical out. Unplug horizontal scanning and hi-voltage plug under the hi-voltage sub. chassis. Remove screw in corner of the bakelite chassis and take out.

GENERAL

NO SOUND, NO PICTURE, NO SNOW

Substitute V4, V5, V6, V7, V8, V9, and V10. Check associated components.

SNOW BUT NO PICTURE OR SOUND

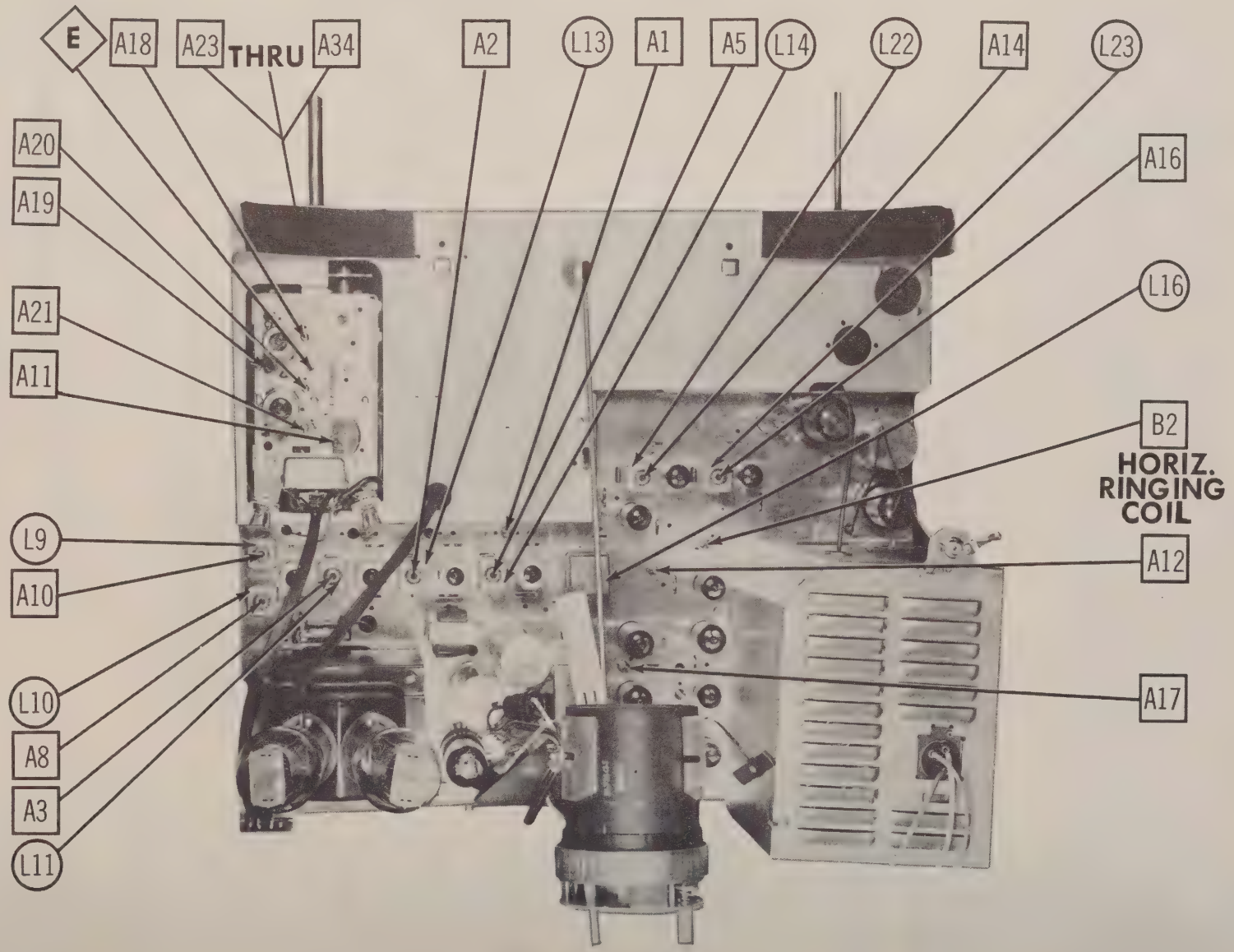
Substitute V2 and V3. Check tuner components.

SNOWY PICTURE, GOOD SOUND (IN STRONG SIGNAL AREAS)

Substitute video IF tubes and Check components.

INTERMITTENT STREAKS

Check high voltage circuit for corona leakage and arcing.



T V CHASSIS TOP VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Turn the horizontal drive control clockwise as far as possible without crowding the center of the picture or causing a vertical white line to appear.

Adjust the horizontal size slug (B4) for a picture slightly wider than necessary to fill the picture mask horizontally.

Adjust the horizontal linearity slug (B5) for a picture that is symmetrical from left to right.

Remove the horizontal discriminator tube (V19) from its socket.

Turn the horizontal hold adjustment (B1) until the picture moves back and forth across the screen with blanking bar vertical.

Replace V19 in its socket.

If the horizontal sync is unstable perform the phasing adjustment as follows:

1. Turn the core of the ringing coil (B2) fully counter-clockwise.

   Short out the peaking resistor, R112.

   Repeat adjustment of horizontal drive control as above.

2. Remove the horizontal discriminator tube (V19) from its socket.

3. Adjust B1 until picture moves back and forth across screen with blanking bar vertical.

4. Replace V19.

5. Adjust the phasing slug (B3) until approximately 1/4 inch of blanking is visible at the right hand edge of picture. In order to see the blanking it may be necessary to reduce the contrast to minimum and adjust the Brightness Control.

6. Remove the short from R112 and readjust the horizontal drive control as described above.

   T u rn B2 clockwise until approximately 1/4 inch of blanking is visible on the right hand edge of picture.

7. Slowly adjust B1 in either direction until the picture falls out of sync, with a number of diagonal bars present.

   Turn B1 to decrease the number of bars and note the least number present just before picture synchronizes. The number should be not less than three, nor more than six.

   Turn B1 in opposite direction from the first, until picture loses sync, then back again, noting the least number of bars present just before synchronization. Again there should be not less than three, nor more than six.

8. Repeat steps 2, 3 and 4.

AGC ADJUSTMENT

Connect a good antenna to the receiver and tune to the strongest TV signal available.

Set the contrast control to approximately 7/8 of maximum position.

Turn the AGC control clockwise until picture "blacks out" .

Turn the AGC control counter-clockwise until the picture reappears and is stable as the fine tuning control is rocked through the picture.

If picture shows too much contrast reduce it with the contrast control.

Turn volume to normal level and check for intercarrier buzz as fine tuning is rocked about the correct tuning point. If present, only a slight retouching of the AGC control should eliminate it. If more than a slight retouching of the AGC control is necessary the alignment of the sound section should be checked.

PINCUSHION CORRECTOR MAGNET

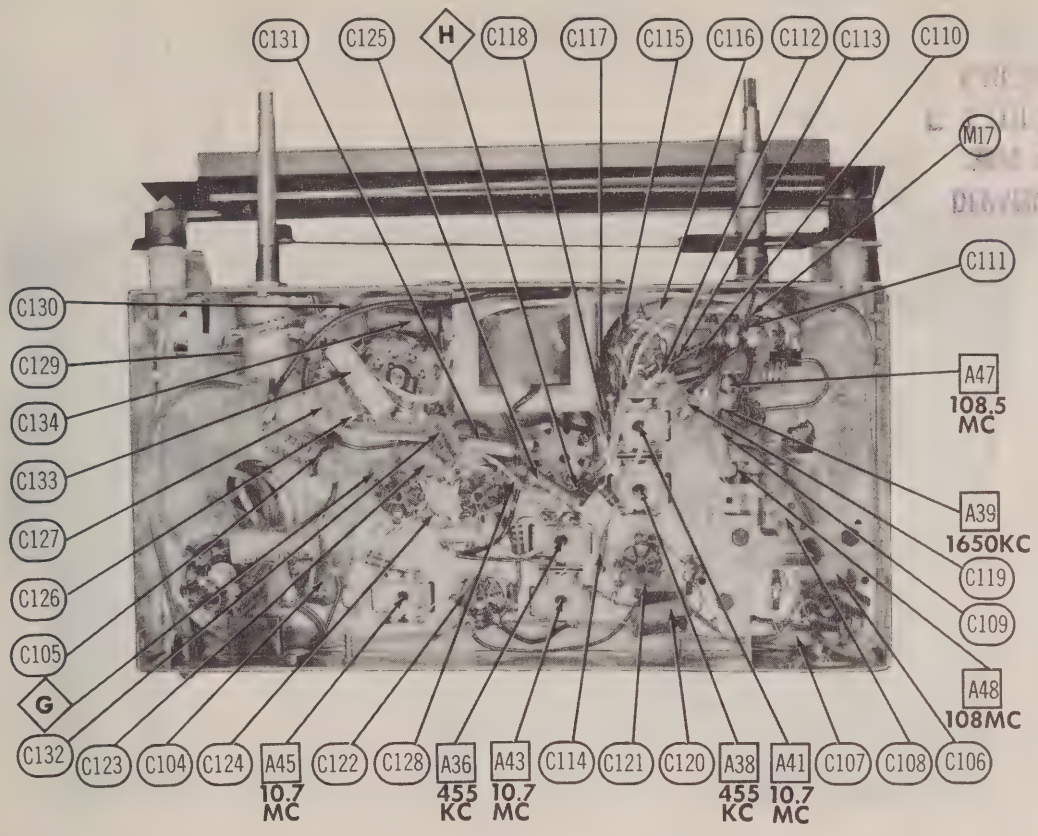
Move the raster to either side by means of the centering shaft on the focus magnet, so that one edge of the raster is visible.

If necessary, adjust the corrector magnet on that side until the edge of the raster is a straight vertical line.

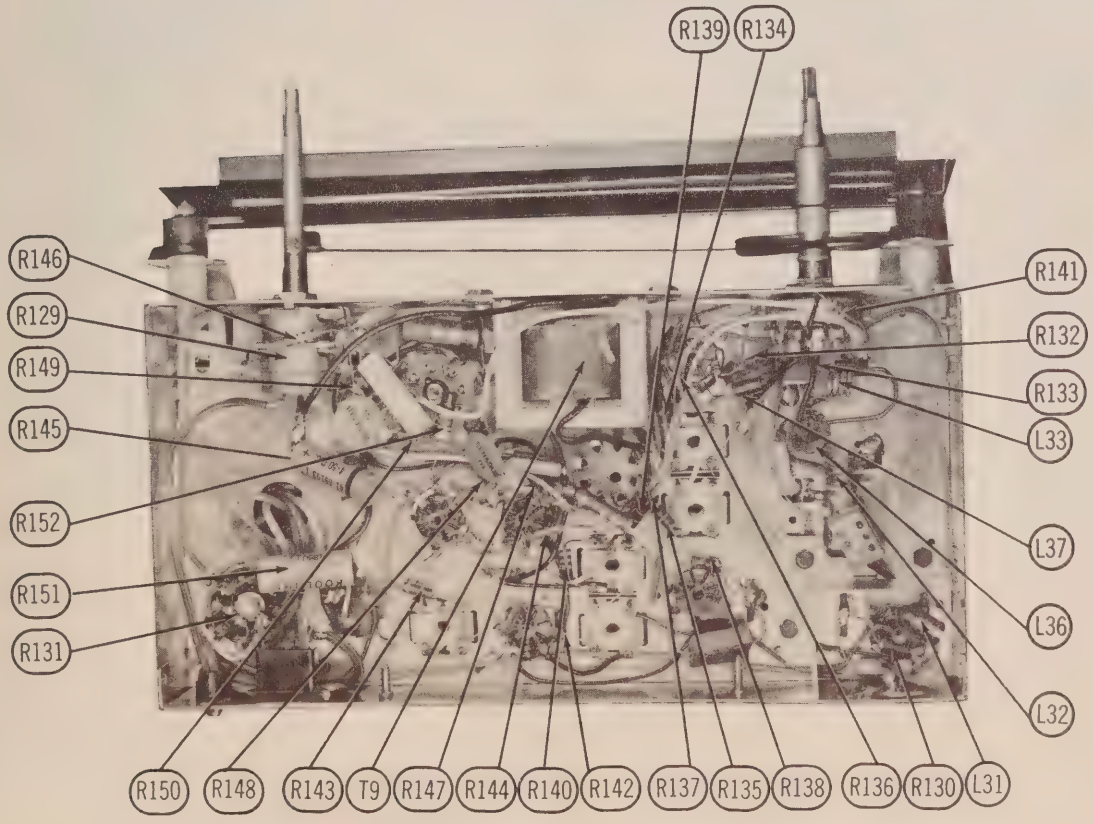
Repeat the procedure for the other side, using the other corrector magnet.

Check the top and bottom edges of the raster and adjust the magnets for best overall compromise.

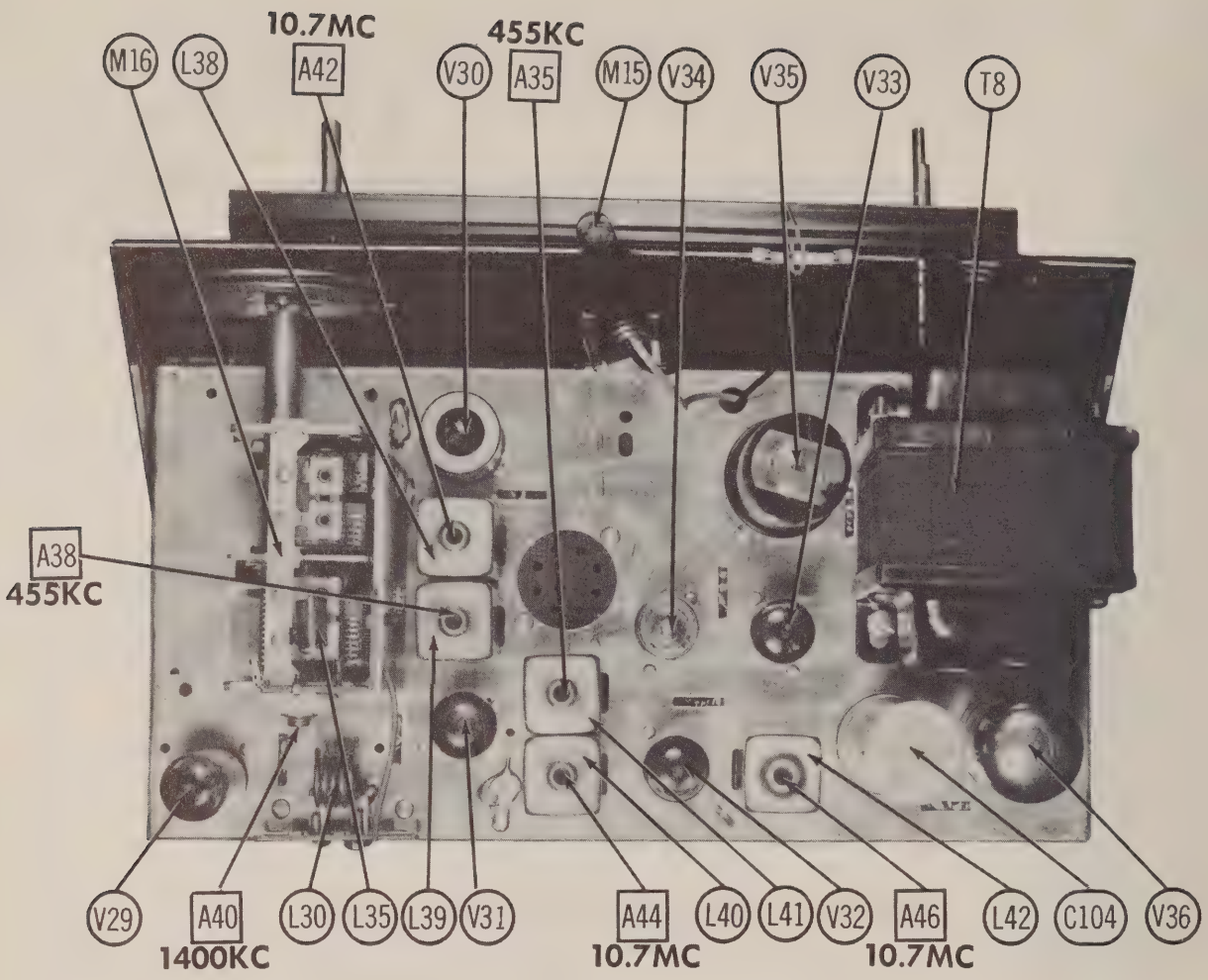
If the corrector magnets are adjusted the adjustment of the horizontal linearity slug should be checked.



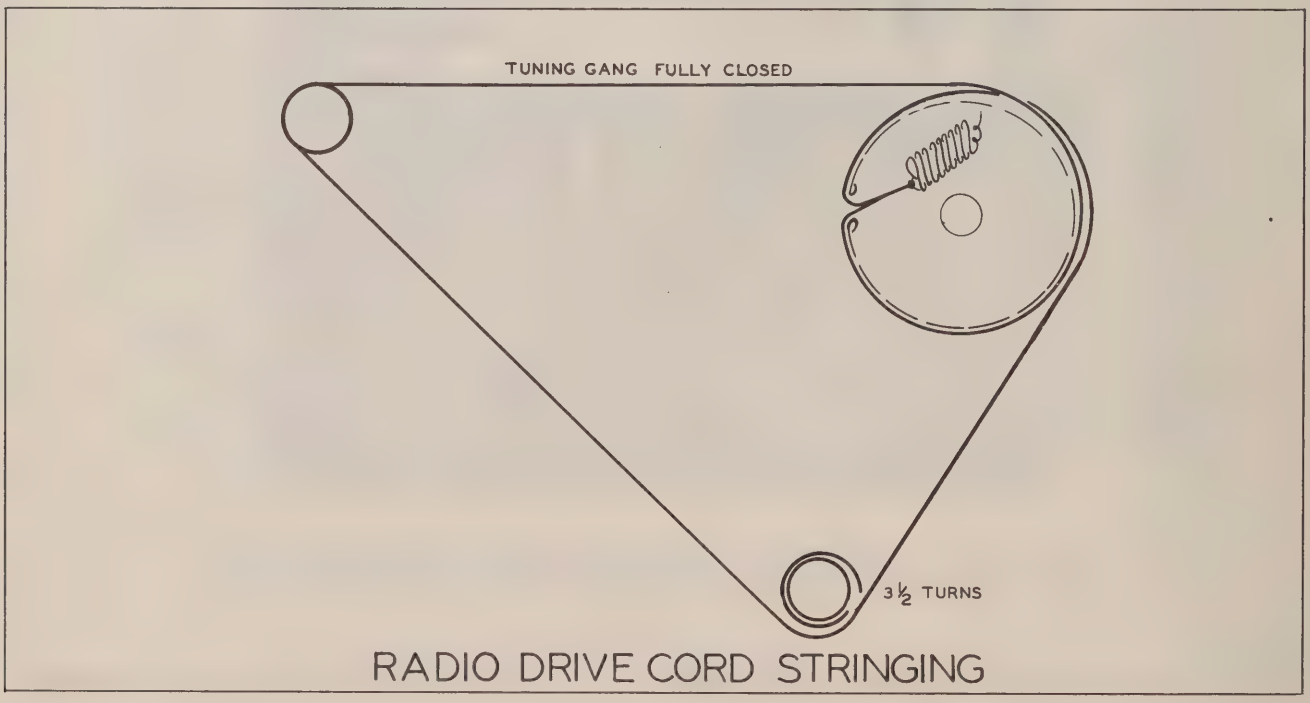
RADIO CHASSIS-BOTTOM VIEW



RADIO CHASSIS-BOTTOM VIEW



RADIO CHASSIS–TOP VIEW



RADIO DRIVE CORD STRINGING

TV PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		SYLVANIA PART No.	STANDARD REPLACEMENT		
V1	UHF Oscillator	6J6	6J6	7BF	
V2	RF Amplifier	6BK7	6BK7	9AJ	
V3	Converter	6J6	6J6	7BF	
V4	1st. Video IF Amp.	6CB6	6CB6	7CM	
V5	2nd. Video IF Amp.	6CB6	6CB6	7CM	
V6	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V7	4th. Video IF Amp.	6CB6	6CB6	7CM	
V8	Video Output	12BY7	12BY7	9BF	
V9	AGC Keying	6AU6	6AU6	7BK	
V10	AGC Rectifier-Sync Separator	12AX7	12AX7	9A	
V11	Sound IF Amp.	6AU6	6AU6	7BK	
V12	Limiter	6AU6	6AU6	7BK	
V13	Ratio Detector	6AL5	6AL5	6BT	
V14	AF Amplifier-AGC Clamper	6AV6	6AV6	7BT	
V15	Audio Output	6V6GT	6V6GT	7S	
V16	Sync Amplifier-Sync Clipper	12AU7	12AU7	9A	
V17	Vert. Oscillator	6C4	6C4	6BG	
V18	Vert. Output	6AH4GT	6AH4GT	8EL	
V19	Horiz. Discr.	6AL5	6AL5	6BT	
V20	Horiz. AFC	6CB6	6CB6	7CM	
V21	Horiz. Oscillator-Horiz. Discharge	12AU7	12AU7	9A	
V22	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V23	Damper	6V3	6V3	9BD	
V24	HV Rectifier	1B3GT	1B3GT	3C	
V25	HV Rectifier	1B3GT	1B3GT	3C	
V26	LV Rectifier	5U4G	5U4G	5T	
V27	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA			RTMA BASE TYPE	NOTES
	SYLVANIA PART No.	SYLVANIA PART No.			
V28	21EP4A	21EP4A		12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	SYLVANIA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	▲40	400	161-2004	AFH2-64		C035		FP266	TVL-2675	
B	▲80	400								
C2A	■40	200	161-3012	AFH4-120		D101		FP453	TVL-4700	
B	▲80	200								
C	▲100	50								
C3A	▲20	400	161-4006	AFH4-95		D055		FP473	TVL-4826	
B	■10	400								
C	25	25								
D	▲10	100								
C4	10	500	161-1010	PRS500/10		BR850A		TC82	TVA-1955	
C5	2	50	161-1001	PRS150/4		BBR2-50T		TC302	TVA-1301	
C6	2	50	161-1001	PRS150/4		BBR2-50T		TC302	TVA-1301	
C7	1.8						NP0K-1R8			
C8	5			SI5NP0	TCZ-4.7		NP0K-050	ZT-555	5TCCB-V47	
C9	800			BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C10	47			BPD-000047	D6-470	TM5Q5	GP1K-470	UC-5447	5GA-Q47	
C11	47			BPD-000047	D6-470	TM5Q5	GP1K-470	UC-5447	5GA-Q47	
C12	10			SI10N750	TCN-10		N750K-100	NT-541	5TCU-Q1	
C13	10			SI10N750	TCN-10		N750K-100	NT-541	5TCU-Q1	
C14	1.5			SI1.5NP0	TCZ-1.5		NP0K-1R5	ZT-5515	5TCCB-V15	
C15	10			SI10NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1	
C16	10			SI10N750	TCN-10		N750K-100	NT-541	5TCU-Q1	
C17	800			BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C18	800			BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C19	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C20	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C21	270		166-0270N	SI270	D6-271		GP2K-271	UC-5327	5GA-T27	
C22	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C23	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C24	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C25	1000		166-1000D	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C26	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C27	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C28	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C29	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C30	1000		166-1000D	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C31	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C32	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C33	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C34	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C35	1000		166-1000D	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C36	4.7		168-0008N	SI5NP0	TCZ-4.7		NP0K-4R7	ZT-555	5TCCB-V47	
C37	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C38	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C39	270		166-0270N	SI270	D6-271		GP2K-271	UC-5327	5GA-T27	
C40	1000		166-1000D	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C41	43		166-0043P		TCZ-43		NP0K-430			
C42	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C43	10		166-0010P	SI10NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1	
C44	10		166-0010P	SI10NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1	
C45	4.7		168-0008N	SI5NP0	TCZ-4.7		NP0K-4R7	ZT-555	5TCCB-V47	
C46	.22	200	162-0202	P488-22		PTE4P22		PT4025	2TM-P22	
C47	.0047	600	162-06247	P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C48	1000		166-1000D	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C49	.22	200	162-0202	P488-22		PTE4P22		PT4025	2TM-P22	
C50	.22	200	162-0202	P488-22		PTE4P22		PT4025	2TM-P22	
C51	.0033	600	162-06233	P688-0033	D6-332	PTE6D33	GP2-333-332	PT6233	6TM-D33	
C52	4.7		168-0008N	SI5NP0	TCZ-4.7		NP0K-4R7	ZT-555	5TCCB-V47	

TV PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA SYLVANIA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C53	4.7		168-0008N	SISNP0	TCZ-4.7		NP0K-4R7	ZT-555	5TCCB-V47	
C54	10		168-0010P	SI10NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1	
C55	4700		168-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C56	4700		168-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C57	47		168-0047N	SI47	D6-470	TM5Q5	GP1K-470	UC-5447	5GA-Q47	
C58	4700		168-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C59	4700		168-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C60	330		166-0330	SIL330	D6-331		GP3K-331	UC-5333	5GA-T33	
C61	680	600	163-0680	SI680	D6-681		GP3K-681	UC-5368	5GA-T68	
C62	.01	600	163-0611	P688-01	D6-103	PT6S1	GP3-333-103	PT611	6TM-S1	
C63	10000		†190-0006	BPD-01	DD-103	TM5S1	831-01	DC-511	5HK-S1	
C64	.01	600	163-0611	P688-01	D6-103	PT6S1	GP3-333-103	PT611	6TM-S1	
C65	.100	500	163-0100	1468-0001	D6-101	5W5T1	GP1K-101	MC335	1FM-31	
C66	.01	600	163-0611	P688-01	D6-103	PT6S1	GP3-333-103	PT611	6TM-S1	
C67	.0047	600	163-0634?	P688-0047	D6-473	PT6SD47	GP3-333-472	PT6247	6TM-D47	
C68	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C70	.047	400	180-0414?	P688-047	DF-503	PT6S47		PT7417	6TM-S47	
C71	.01	600	163-0611	P688-01	D6-103	PT6S1	GP3-333-103	PT611	6TM-S1	
C72	.0047	600	163-0634?	P688-0047	D6-473	PT6SD47	GP3-333-472	PT6247	6TM-D47	
C73A	.003		P688-003			PT6SD2		PT623		
B	.005		P688-005	+190-0007	+PC-100	PT6SD5	+1405-01	PT625	+101C1	
C	.008		P688-008			PT6SD8		PT628		
C74	.001	600	163-0621	P688-001	D6-102	PT6D1	GP3L-102	PT621	6TM-D1	
C75	.0033	600	163-0633?	P688-0033	D6-332	PT6SD33	GP3-333-332	PT6233	6TM-D33	
C76	680	500	163-0680	1473-0007		5W5T1		MC-37	1FM-37	
C77	.047	400	180-0414?	P688-047	DF-503	PT6S47		PT6147	6TM-S47	
C78	.0033	600	163-0633?	P688-0033	D6-332	PT6SD33	GP3-333-332	PT6233	6TM-D33	
C79	.01	600	163-0611	P688-01	D6-103	PT6S1	GP3-333-103	PT611	6TM-S1	
C80	.1	600	160-0601	P688-1	DF-104	PT6P1		PT601	6TM-P1	
C81	680	500	163-0680	1479-0007		3R6T7		MS-37		Note 1
C82	.00022	1000	160-0322			PT6P22				
C83	100	500	163-0100	1468-0001	D6-101	5W5T1	GP1K-101	MC335	1FM-31	
C84	.0047	400	163-0634?	P688-0047	D6-472	PT6D47	GP3-333-472	PT6347	6TM-D47	
C85	.015	400	163-0615	P688-015		PT6S15		PT6115	6TM-S15	
C86	100	500	163-0100	1468-0001	D6-101	5W5T1	GP1K-101	MC335	1FM-31	
C87	.1	200	160-0601	P268-1	DF-104	PJ3P1		PT401	2TM-P1	
C88	.047	400	180-0414?	P688-047	DF-503	PT6S47		PT7417	6TM-S47	
C89	.22	200	160-0320	P488-22		PT4P22		PT7425	2TM-P22	
C90	.33	200	160-0321	P488-22		PT4P22		PT7425	2TM-P22	
C91	.0033	400	160-0623?	P688-0022	D6-222	PT6SD22	GP2-333-222	PT6222	6TM-D22	
C92	.01	600	163-0611	P688-01	D6-103	PT6S1	GP3-333-103	PT611	6TM-S1	
C93	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C94	680	500	163-0680	1479-0007		3R5T7		MS-37		
C95	1000		166-1000P	SI100D	D6-102	TM5D1	GP3L-102	UC-521	5HK-D1	
C96	.047	400	180-0414?	P688-047	DF-503	PT6S47		PT7417	6TM-S47	
C97	.1	600	160-0601	P688-1		PT6P1		PT7401	6TM-P1	
C98	.033	600	163-0633	P688-033		PT6SD33		PT6133	6TM-S33	
C99	68	2000	174-0068							
C100	.22	200	160-0320	P488-22		PTE4P22		PT7425	2TM-P22	
C101	.22	600	160-0622	684-25		PTE6P25		PT6025	6TM-P25	Note 2
C102	500	30KV	189-0015	HV30C	TV3-502	MM-C20TS	413-501		30DK-T5	
C103	500	30KV	189-0015	HV30C	TV3-502	MM-C20TS	413-501		30DK-T5	

Note 1. Some Models use two 470MMF capacitors in this application (Part #163-0470)
Note 2. Some Models use two .1MFD capacitors in this application (Part #160-0601)
♦ Items C73A, C73B, C73C, H87A, R87B, R87C are combined in one unit.
† Items C63 and R65 are combined in one unit.

CONTROLS

ITEM No	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA SYLVANIA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	2 Meg	½	157-0019					Brightness-Panel
B	1 Meg	½						Volume & Switch
								(R1B)-Rear
R2A	250KΩ	½	153-0007	QU-130	AG-55-8	AB-50	SU-46	Horiz. Drive
B	Shaft		Not Req.	HQ	FKS-1/4	AK-1	Not Req.	Attach to R2A
R3A	1 Meg	½	153-0009	QU-137	AG-61-8	AB-89	SU-54	AGC
B	Shaft		Not Req.	HQ	FKS-1/4	AK-1	Not Req.	Attach to R3A
R4A	250Ω	2	153-3007	WK-250	A43-300	VK-123	B250L	Contrast-Wire Wound
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Not Req.	Attach to R4A
R5A	1.5Meg	½	153-0014	QU-138	AG-63-8	AB-75	SU-56	Height
B	Shaft		Not Req.	HQ	FKS-1/4	AK-1	Not Req.	Attach to R5A
R6A	2500Ω	2	153-3011	WK-2500	A43-2500	VK-132	W2500L	Vert. Linearity-Wire Wound
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Not Req.	Attach to R6A
R7A	2 Meg	½	153-0018	QU-139	AG-63-8	AB-75	SU-56	Vert. Hold
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R7A
R8A	250KΩ	½	153-0015	QU-130	AG-55-8	B-50	U-46	Halo Light
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R8A

RESISTORS

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA SYLVANIA PART No.	IRC PART No.	NOTES
R9	3900Ω	½		BTS-3900	
R10	33KΩ	½		BTS-33K	
R11	2.2Meg	½			
R12	1.8Meg	½		BTS-1.8Meg	
R13	470Ω	½		BTS-470	
R14	10KΩ	½		BTS-10K	
R15	180KΩ	½		BTS-180K	
R16	10KΩ	½		BTS-10K	
R17	10KΩ	½			
R18	4700Ω	½		BTS-4700	
R19	3300Ω	7	187-0008	1 3/4A-3500	
R20	56KΩ	½	181-0563	BTS-56K	
R21	1.5Meg	½	181-0155	BTS-1.5Meg	
R22	100KΩ	½	181-0104	BTS-100K	
R23	1000Ω	½	181-0102	BTS-1000	
R24	2700Ω	½	181-0272	BTS-2700	
R25	47Ω	½	181-0470		
R26	6800Ω	½	181-0682		
R27	1000Ω	½	181-0102	BTS-1000	
R28	1000Ω	½	181-0102	BTS-1000	
R29	56KΩ	½	181-0563	BTS-56K	
R30	2700Ω	½	181-0272	BTS-2700	
R31	47Ω	½	181-0470		
R33	6800Ω	½	181-0682		
R33	1000Ω	½	181-0102	BTS-1000	
R34	1000Ω	½	181-102	BTS-1000	
R35	18KΩ	½	181-0183	BTS-18K	
R36	1500Ω	½	181-0152	BTS-1500	
R37	47Ω	½	181-0470		
R38	6800Ω	½	181-0682		
R39	1000Ω	½	181-0102	BTS-1000	
R40	1500Ω	½	181-0152	BTS-1500	
R41	330Ω	½	181-0331	BTS-330	
R42	1000Ω	½	181-0102	BTS-1000	
R43	1000Ω	½	181-0102	BTS-1000	
R44	10KΩ	½	181-0103		
R45	3900Ω	½	181-0392	BTS-3900	
R46	8200Ω	½	181-0822	BTS-8200	
R47	3300Ω	½	181-0332	BTS-3300	
R48	15KΩ	½	181-0153	BTS-15K	
R49	3900Ω	3	181-0392	BTS-3900	
R50	6800Ω	3	183-0682	BTS-6800	

RESISTORS (CONT.)

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA SYLVANIA PART No.	IRC PART No.	NOTES
R51	6800Ω	2	183-0682	BTB-6800	
R52	330KΩ	½	181-0334	BTS-330K	
R53	4.7Meg	½	181-0475	BTS-4.7Meg	
R54	470KΩ	½	181-0474	BTS-470K	
R55	330KΩ	½	181-0334	BTS-330K	
R56	1 Meg	½	181-0105	BTS-1 Meg	
R57	47KΩ	½	181-0473		
R58	100Ω	½	181-0101	BTS-100	
R59	1000 Ω	½	181-0102	BTS-1000	
R60	47KΩ	½	181-0473		
R61	22KΩ	½	181-0223	BTS-22K	
R62	270Ω	½	181-0271	BTS-270	
R63	100KΩ	½	181-0104	BTS-100K	
R64	68KΩ	½	181-0683	BTS-68K	
R65	47KΩ	½	† 190-0005	BTS-47K	
R66	15Meg	½	181-0156	BTS-15Meg	
R67	220KΩ	½	181-0224	BTS-220K	
R68	470KΩ	½	181-0474	BTS-470K	
R69	39ΩΩ	1	182-0391	BTA-390	
R70	2000Ω	5	187-0003	1 3/4A-2000	
R71	47Ω	½	181-0470		
R72	33KΩ	2	189-0026	BTB-33K	
R73	33KΩ	3	189-0026	BTB-33K	
R74	33KΩ	½	181-0333	BTS-33K	
R75	470KΩ	½	181-0474	BTS-470K	
R76	10KΩ	½	181-0103	BTS-10K	
R77	33KΩ	½	181-0333	BTS-33K	
R78	10KΩ	½	181-0103	BTS-10K	
R79	680KΩ	½	181-0684	BTS-680K	
R80	12KΩ	½	181-0123	BTS-12K	
R81	10KΩ	½	181-0103	BTS-10K	
R82	680KΩ	½	181-0684	BTS-680K	
R83	330Ω	½	181-0331	BTS-330	
R84	360KΩ-5%	½		BTA-390K-5%	Note 1
R85	15KΩ	3		BTB-15K	Note 2
R86	33KΩ	½		BTA-33K	Note 1
R87A	22KΩ	½		BTS-22K	
B	8200Ω	½	♦190-0007	BTS-8200	
C	8200Ω	½		BTS-8200	
R88	1.8Meg	½	181-0185	BTS-1.8Meg	
R89	33KΩ	½	181-0333	BTS-33K	
R90	220KΩ	½	181-0224	BTS-220K	
R91	680KΩ	½	181-0684	BTS-680K	
R92	100KΩ	½	181-0104	BTS-100K	
R93	220KΩ	½	181-0224	BTS-220K	
R94	10Meg	½	181-0105	BTS-10Meg	
R95	2.2Meg	½	181-0225	BTS-2.2Meg	
R96	470KΩ	½	181-0474	BTS-470K	
R97	120Ω	½	182-0122	BTA-1200	
R98	12KΩ	5% ½	181-0123	BTS-12K 5%	
R99	100KΩ	½	181-0104	BTS-100K	
R100	100KΩ	½	181-0104	BTS-100K	
R101	1Meg	½	181-0105	BTS-1Meg	
R102	470KΩ	½	181-0474	BTS-470K	
R103	1000Ω	½	181-0102		
R104	5200Ω	½	181-0522	BTS-5200	
R105	330Ω	½	181-0331	BTS-330	
R106	15KΩ	1	182-0153	BTA-15K	
R107	33KΩ	2	183-0333	BTB-33K	
R108	470KΩ	½	181-0474	BTS-470K	
R109	22KΩ	½	181-0223	BTS-22K	
R110	150KΩ	½	181-0154	BTS-150K	
R111	82KΩ	½	181-0823	BTS-82K	
R112	4700Ω	½	181-0472	BTS-4700	
R113	4.3Ω		189-0007		
R114	470Ω	½	181-0471		
R115	470KΩ	½	181-0474	BTS-470K	
R116	100Ω	½	181-0101		
R117	18KΩ	2	183-0183	BTB-18K	
R118	1000Ω	2	183-0102	BTB-1000	
R119	1Meg	2	189-0024		
R120	1Meg	2	189-0024		
R121	1Meg	2	189-0024		
R122	39KΩ	2	183-0393	BTB-39K	
R123	2000Ω	5	187-0003	1-3/4A-2000	
R124	4700Ω	2	183-0472	BTB-4700	
R125	4700Ω	2	183-0472	BTB-4700	
R126	4.3Ω		189-0007		
R127	4.7Ω	1	189-0029		
R128	220KΩ	½	181-0224	BTS-220K	

Note 1. Not used in all Models.
Note 2. Some Models use a 10KΩ resistor in this application
† Items R65, C63 are combined in one unit.
♦ Items H87A, R87B, H87C, C73A, C73B, C73C are combined in one unit.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	SEC. 1	SEC. 2	SEC. 3	REPLACEMENT DATA SYLVANIA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC	650VCT	316VCT	5VAC	141-0021				
	⑤ 2.1A	.170ADC	⑤ 3A	⑤ 11A					
			SEC. 4	SEC. 5					
			5VAC	6.3VAC					
T2	117VAC	1.2K V	⑤ 3A	⑤ 11A	143-0023 ①				
	⑤ .12A								

① Halo light transformer

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	SEC.	REPLACEMENT DATA SYLVANIA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T3	130Ω	750Ω	342-0002	A-8125	A-3000 ①	T80-3 ②	A-97X	Vert. Osc. Trans.
T4	87Ω tap	31Ω	341-0007					Horiz. Output Trans.
	⑤ 27Ω	SEC. 2						
		7Ω						
		SEC. 3						
		0Ω						
		SEC. 4						
		0Ω						
T5	900Ω	9Ω	341-0006	A-8113	A-3036	T80-5 ①	A-99X ①	Vert. Output Trans.
T6A	27Ω		100-0009					Horiz. Deflection Coils
B	44Ω							Vert. Deflection Coils

① Drill one new mounting hole
② Mount on top of chassis.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	SEC.	DC RES. PRI.	SEC.	REPLACEMENT DATA SYLVANIA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No	NOTES
T7	5KΩ	3.1Ω	540Ω	.63Ω	143-0022	A-3877 ①	A-29 30①	RO-9 ①	S-5X ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS SIZE	FIELD	V. C. IMP.	REPLACEMENT DATA SYLVANIA PART No.	VIKING PART No.	QUAM PART No.	NOTES
SP1	12"	PM	3.1Ω	539-1205 539-1004 ① 539-0003 ②	12J11	12A4A 10A4A ① 6A10 ②	① 10" PM Speaker used in Models 172, 177, and 176 ② 6½" PM Speaker used in Model 175

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT RESISTANCE	D. C. RESISTANCE	INDUCTANCE (@ CURRENT 1000 ᵐA)	REPLACEMENT DATA SYLVANIA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
L1	.180A	21.5Ω	.5 Hy.	145-0006	C-2328 ①			
L2	.106A	97Ω	1.1 Hy.	145-0002	C-2326 ①	C-2996 ①	TR-1733 ①	C-2LX ①

① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA SYLVANIA PART No.	MERIT PART No.	NOTES
L3A	Ant. Mixer & Osc. Coils	0Ω		110-0003		Channel 2
B	Ant. Mixer & Osc. Coils	0Ω		110-0003		Channel 3
C	Ant. Mixer & Osc. Coils	0Ω		110-0004		Channel 4
D	Ant. Mixer & Osc. Coils	0Ω		110-0005		Channel 5
E	Ant. Mixer & Osc. Coils	0Ω		110-0006		Channel 6
F	Ant. Mixer & Osc. Coils	0Ω		110-0007		Channel 7
G	Ant. Mixer & Osc. Coils	0Ω		110-0008		Channel 8
H	Ant. Mixer & Osc. Coils	0Ω		110-0009		Channel 9
I	Ant. Mixer & Osc. Coils	0Ω		110-0010		Channel 10
J	Ant. Mixer & Osc. Coils	0Ω		110-0011		Channel 11
K	Ant. Mixer & Osc. Coils	0Ω		110-0012		Channel 12
L	Ant. Mixer & Osc. Coils	0Ω		110-0013		Channel 13
L4	40MC IF Strip	0Ω		110-0001		Used on Chassis 1-508-2 only
L5	Feedback Coil	0Ω				
L6	RF Choke	0Ω				
L7	RF Choke	0Ω				
L8	Conv. Plate	.1Ω	0Ω			
L9	1st. Video IF	0Ω		115-0001		
L10	Video IF Coupling	0Ω		119-0002		Includes Trap
L11	2nd. Video IF	.1Ω	.1Ω	119-0003		Includes Trap
L12	Vid. Choke	0Ω		147-0004		
L13	3rd. Video IF	.1Ω	.1Ω	119-0004		Includes Trap
L14	4th. Video IF	.1Ω	.1Ω	119-0005		
L15	Cathode Trap	.1Ω	0Ω	118-0011		
L16	5th. Video IF & Det. Assy.	.1Ω		126-0001		Includes Crystal D440
L17	RF Choke	1.4Ω		118-0010		
L18A	Series Peaking Coil	6.5Ω		131-3010	TV-185	200 Microhenries
B	Shunt Peaking Coil	9Ω			TV-185	330 Microhenries, part of L18A
L19	4.5MC Trap	8Ω		130-0001	TV-151	
L20A	Series Peaking Coil	5.5Ω		131-2007	TV-184	135 Microhenries
B	Shunt Peaking Coil	7Ω			TV-185	250 Microhenries, part of L20A
L21	1st. Sound IF	6Ω		130-0001	TV-151	
L22	2nd. Sound IF	2.8Ω	2.8Ω	120-0003	TV-113	
L23	Ratio Det.	1Ω	1.6ΩCT	128-0008	TV-115	Tertiary Winding - .8Ω
L24	Horiz. Discr.	40Ω	95ΩCT	128-0009		Cathode Winding - 9.5Ω
L25	Ringing Coil	37Ω		146-0005	TV-163	
L26	RF Choke	1.4Ω		118-0010		
L27	RF Choke	1.4Ω		118-0010		
L28	Horiz. Lin.	5.8Ω		133-0002		Tapped @ 3.3Ω
L29	Width Coil	2.2Ω		132-0002	MWC-2 *	

* Enlarge mounting hole.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA SYLVANIA PART No. FUSE	SYLVANIA PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M1	3AG (Slo-Blo)	1/4A. 250V.	191-0014	487-0008	313.250 (3AG-1/4A. Slo-Blo)	357001	MDL-1/4	4405

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA SYLVANIA PART No.	NOTES
M2	Bayonet	6-8	.25	Brown	611-0047	Type #47

MISCELLANEOUS

ITEM No.	PART NAME	SYLVANIA PART No.	NOTES
M3	RF Tuner	323-0017	VHF
M4	RF Tuner	323-0019	UHF
M5	Trap	114-0001	IF Rejection
M6	Crystal Diode	1N60B	Video Detector
M7	Switch	577-0004	UHF-VHF Selector
M8	Magnet	400-0014	Focus and Centering
M9	Ion Trap	400-0013	
M10	Magnet	100-0010	Pin-Cushion Corrector (2 used)
M11	Tube	611-2100	Cold Cathode (Halolight)
M12	Ballast Tube	40A1	Horiz. Volt. Regulator
	Bezel	714-0011	Models 173K, 172M, 172KU, 172MU, 176B, 176M, 176BU & 178MU
	Bezel	714-0010	Models 175B, 175L, 175M, 175BU and 175MU
	Bezel	714-0012	Models 176B, 176L, 176M, 176BU, 176MU, 177B, 177M, 177BU and 177MU
	Mask	716-0003	
	Safety Glass	710-0009	
	Knob	744-0022	Channel Selector
	Knob	744-0029	Fine Tuning
	Knob	744-0023	Brightness
	Knob	744-0021	Halo Selector

SYLVANIA MODELS 172K, KU, 172M, MU, 175B, BU, L, M, MU, 176B, BU, L, M, MU, 177B, BU, M, MU, 178B, BU, M, MU (Ch. 1-508-1, 1-508-2)

RADIO PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: SYLVANIA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V29	FM RF Amplifier	6AU6	6AU6	7BK	
V30	FM AM Converter	6BE6	6BE6	7CH	
V31	lst. FM AM IF Amp	6BA6	6BA6	7BK	
V32	2nd. FM IF Amp.	6AU6	6AU6	7BK	
V33	Ratio Detector	6AL5	6AL5	6BT	
V34	Det.-AVC-AF Amp	6AT6	6AT6	7BT	
V35	Audio Output	6W6GT	6W6GT	7S	
V36	Rectifier	7Z4	7Z4	5AB	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	SYLVANIA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C104A	■60	250	161-3011						R1268	
B	▲60	250								
C	25	25								
C105	4	50	161-1008	PRS150/4		BR550		TC30	TVA-1303	
C106	470	500	163-0470	1468-0005	D6-471	5W5T5	GP2K-471	MC245	1FM-35	
C107	470	500	163-0470	1468-0005	D6-471	5W5T5	GP2K-471	MC245	1FM-35	
C108	22	500	163-0022	1468-000025	D6-220	5W5Q25	GP1K-220	MC220	1FM-425	
C109	470	500	163-0470	1468-0005	D6-471	5W5T5	GP2K-471	MC245	1FM-35	
C110	47	500	163-0047	1469-00005		5R5Q5		MCB225	MS-45	
C111	10		166-0010P	SI10NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1	
C112	6		165-0006A		TCZ-6		NP0K-060			
C113	6		165-0006A		TCZ-6		NP0K-060			
C114	10000		168-0002D	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C115	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C116	470	500	163-0470	1468-0005	D6-471	5W5T5	GP2K-471	MC245	1FM-35	
C117	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C118	10000		168-0002D	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C119	470		166-0470N	SI470	D6-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C120	3900	500	163-3900	1464-004		1DR5D4		MCB463	MS-24	
C121	10000		168-0002D	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C122	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C123	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C124	470		166-0470N	SI470	D6-471		GP2K-471	UC-5347	5GA-T47	
C125	3300		166-3300P	SI3300	D6-332		GP2-333-332	UC-5233	5HK-D33	
C126	270		166-0270N	SI270	D6-271		GP2K-271	UC-5327	5GA-T27	
C127	10000		168-0002D	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C128	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C129	47	500	163-0047	1468-00005	D6-470	5W5Q5	GP1K-470	MC245	1FM-45	
C130	4700		166-4700D	BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C131	100	500	163-0100	1468-0001	D6-101	5W5T1	GP1K-101	MC235	1FM-31	
C132	10000		168-0002D	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C133	2000		166-2000P	SI2000	D6-202	TM5D2	GP2-333-202	UC-522	5HK-D2	
C134	.01	400	160-0411	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	SYLVANIA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R129A	1 Meg	½	157-0017	*			UF16A	Tone-Panel
B	1Meg	½					UR16-T35	Volume-Tap ⓐ 300KΩ-Rear
C	Switch						US-27	Attach to R129B

* CONCENTRIKIT EQUIVALENT-KIT K-2, BASE ELEMENTS & SHAFTS B13-137 & P1-212 (Panel) B13-137X & R2-226 (Rear) & SWITCH 76-2.

RESISTORS

ITEM No.	RATING OHMS	RATING WATT	SYLVANIA PART No.	IRC PART No.	NOTES
R130	120Ω	½	181-0121	BTS-120	
R131	180Ω	½	181-0181	BTS-180	
R132	100Ω	½	181-0101	BTS-100	
R133	22KΩ	½	181-0223	BTS-22K	
R134	2700Ω	½	181-0272	BTS-2700	
R135	180Ω	½	181-0181	BTS-180	
R136	1Meg	½	181-0105	BTS-1Meg	
R137	2.2Meg	½	181-0225	BTS-2.2Meg	
R138	68Ω	½	181-0680		
R139	2700Ω	½	181-0272	BTS-2700	
R140	47KΩ	½	181-0473	BTS-47K	
R141	470KΩ	½	181-0474	BTS-470K	

ITEM No.	RATING OHMS	RATING WATT	SYLVANIA PART No.	IRC PART No.	NOTES
R142	100Ω	½	181-0101	BTS-100	
R143	180Ω	½	181-0181	BTS-180	
R144	22KΩ	½	181-0223	BTS-22K	
R145	22KΩ	½	181-0223	BTS-22K	
R146	47KΩ	½	181-0473	BTS-47K	
R147	10Meg	½	181-0106	BTS-10Meg	
R148	470KΩ	½	181-0474	BTS-470K	
R149	180Ω	1	182-0181	BTA-180	
R150	470KΩ	½	181-0474	BTS-470K	
R151	1850Ω	5	187-0009	1-3/4A-2000	
R152	4.3Ω	½	189-0007		

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	SYLVANIA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T8	117VAC ⓐ .56A	430VCT .097ADC	6.3VAC ⓐ 4.1A		141-0017				

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	SYLVANIA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T9	5.2KΩ	3.1Ω	320Ω tap ⓐ 15Ω	.59Ω	143-0018					

RADIO PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	SYLVANIA PART No.	MERIT PART No.	
L30	FM Ant. Coil	0Ω		111-0012		
L31	FM RF Choke	.1Ω		146-0014		
L32	FM RF Coil	0Ω		112-0009		Tapped
L33	FM Osc. Coil	0Ω		113-0021		
L34	AM Loop Ant.	.1Ω	2Ω	582-0012		
L35	AM Ant. Coil	.1Ω		146-0014		
L36	AM Osc. Coil	2.2Ω		113-0011		Tapped @ 2Ω
L37	RF Choke	0Ω		146-0013		
L38	1st. FM IF	1.1Ω	.2Ω	121-0017	FM-254	
L39	1st. AM Ir	19Ω	19Ω	121-0018	BC-352	
L40	2nd. FM IF	1.1Ω	.2Ω	122-0017	FM-254	
L41	2nd. AM IF	12.5Ω	13Ω	122-0019	BC-355	
L42	Ratio Det.	2.8Ω	1Ω CT	128-0007	FM-255	Tertiary Winding - .5Ω

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA							REMARKS
	SYLVANIA PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M13	916-0002	AC-AG-J	A-AG	W26A	A67U	33	0-2 or S-2	

ASTATIC, SHURE AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENTS SEE BELOW.

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

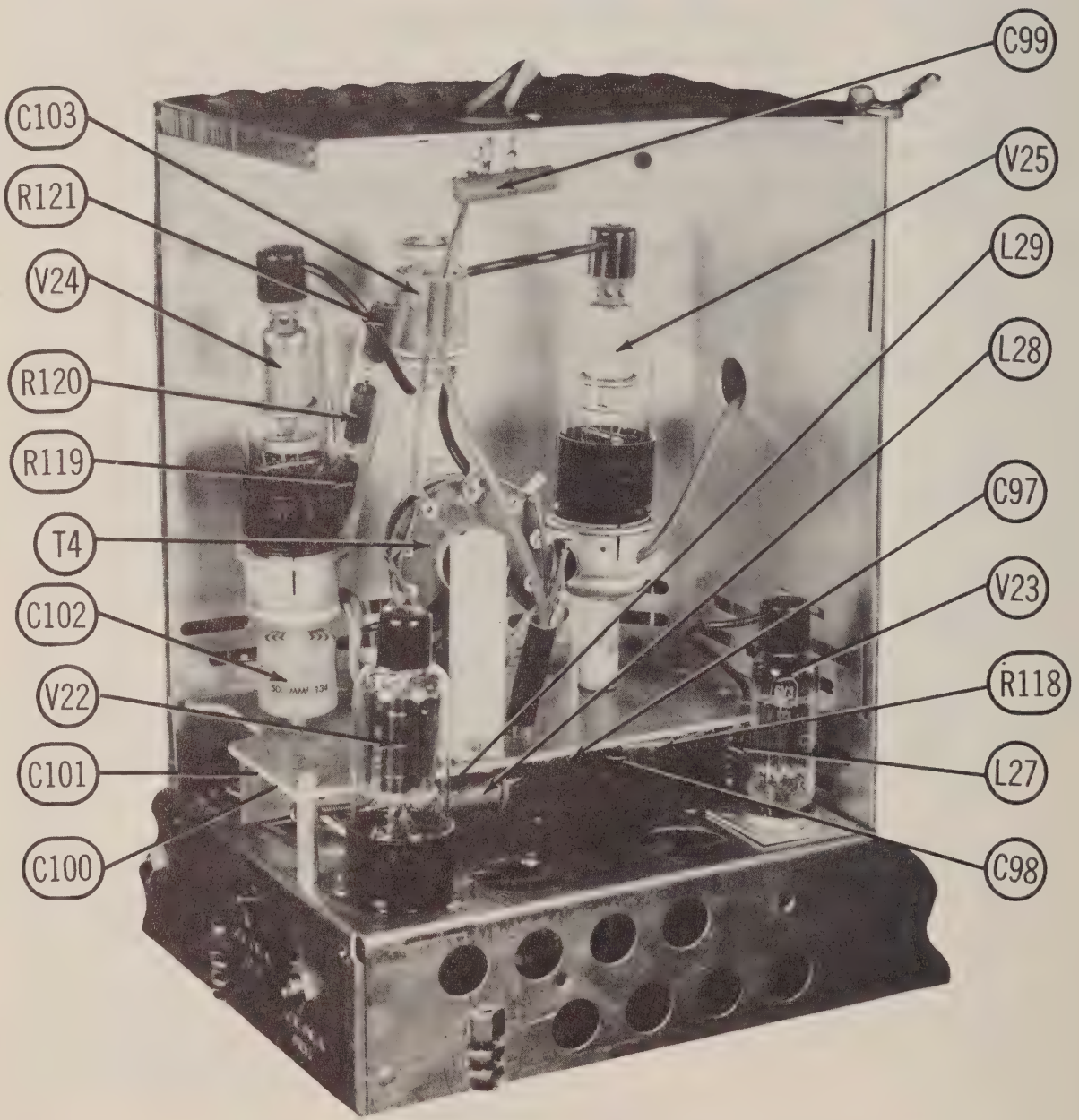
ITEM No.	REPLACEMENT DATA			REMARKS
	SYLVANIA PART No.	WALCO PART No.	JENSEN PART No.	
M14	902-0002	W-30AGS	JPS-312	

DIAL LIGHTS

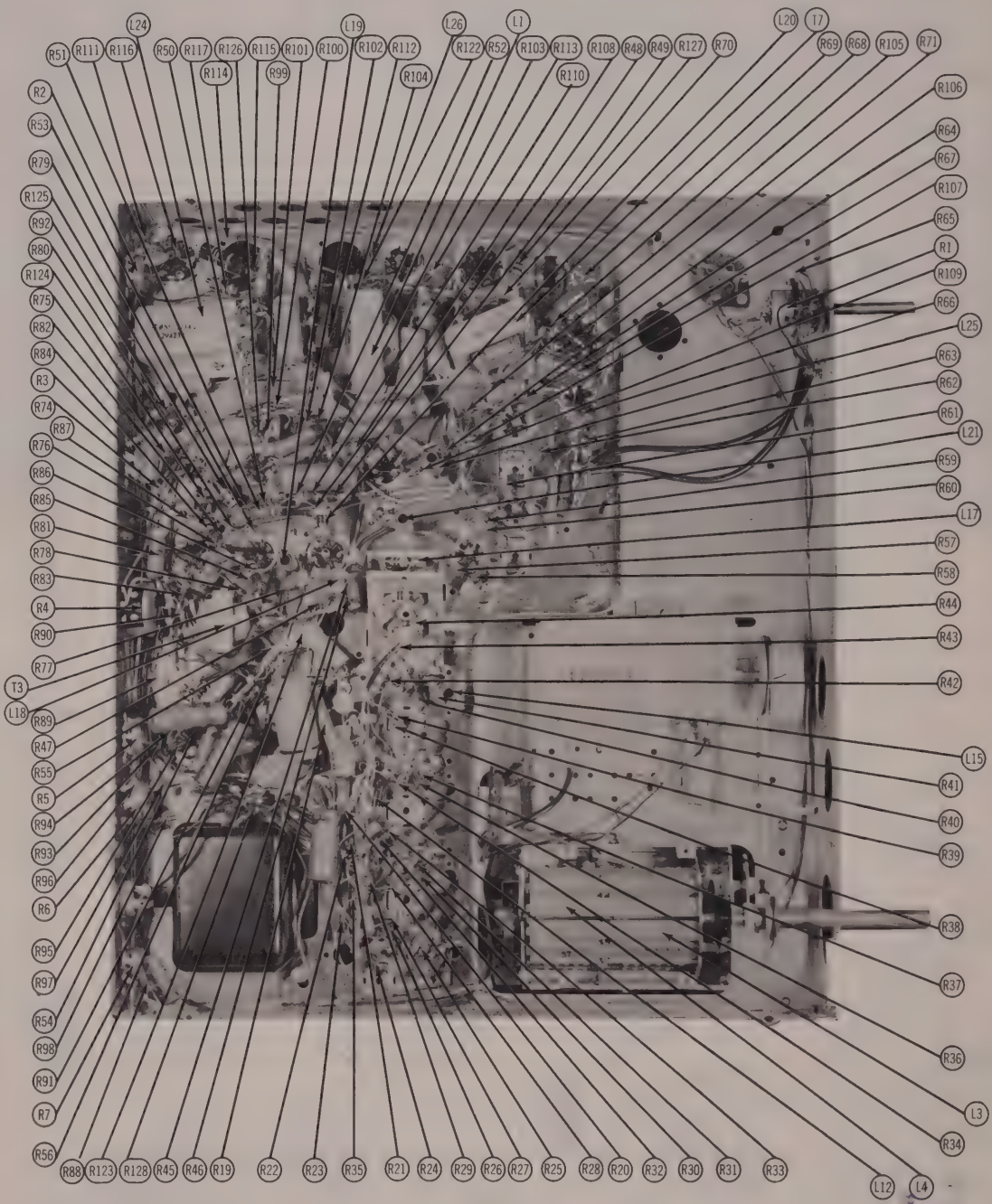
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					SYLVANIA PART No.		
M15	Bayonet	6-8	.25	Brown	611-0047		Type #47

MISCELLANEOUS

ITEM No.	PART NAME	SYLVANIA PART No.	NOTES
M16	Tuning Capacitor	170-0008	20-508MMF, 20-188MMF
M17	Switch	573-0004	FM-AM-Phono Sel.
	Trimmer Capacitor	172-0031	AM Loop
	Dial Backplate	726-0003	
	Escutcheon	714-0007	
	Dial	722-0020	
	Dial Pointer	792-0007	
	Knob	740-0028	Off/on Volume
	Knob	743-0002	Function Selector
	Knob	744-0017	Tuning and Tone Control (2 used)



HIGH VOLTAGE COMPARTMENT



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

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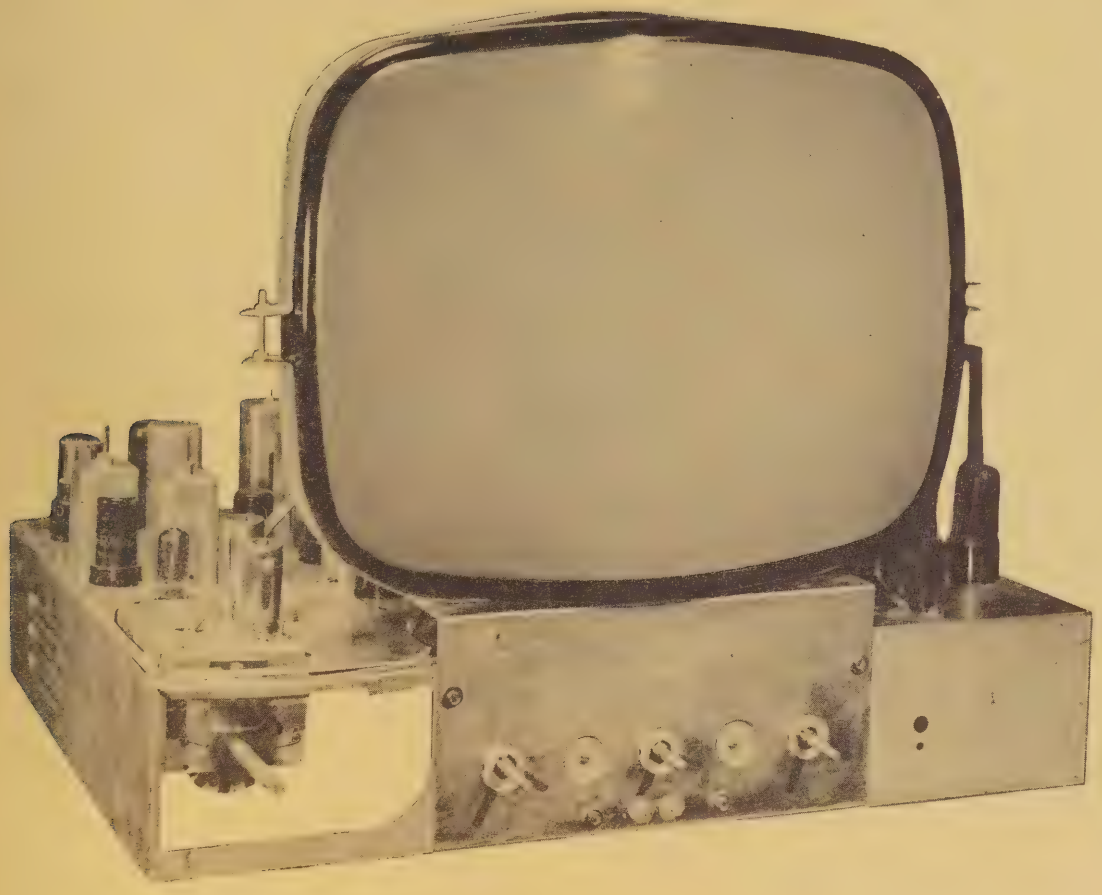
DENVER, COLORADO



TRANSVISION
CHASSIS A-4$_1$

CHASSIS A-4$_1$

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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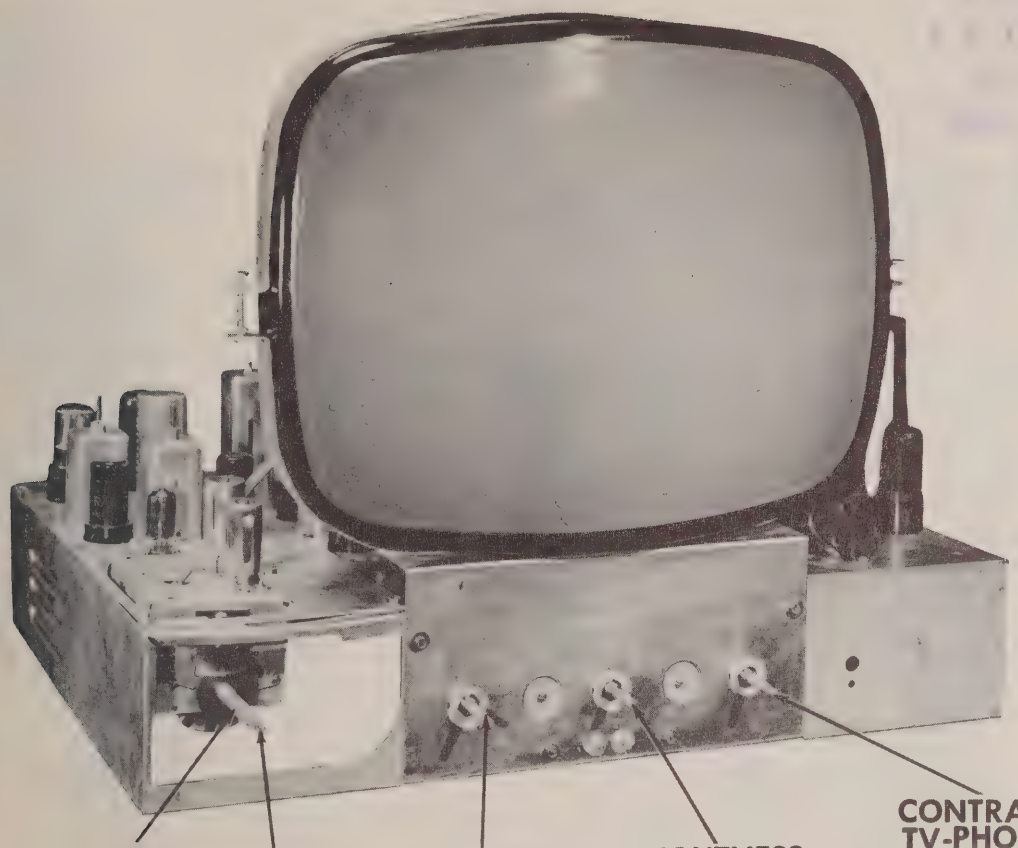

TRANSVISION
CHASSIS A-4$_1$

TRADE NAME	Transvision Models A17B1, A17BD1, A17G4, -1, A17TMD, -B, -BP, A17TRM, -B, -BP, A20E4, -1, A20G1, A20GD1, A20G4, -1, A20TM, A20TMD, A201, D, A206S, A20SD (Ch. A-4$_1$).
MANUFACTURER	Transvision Inc., New Rochelle, New York.
TYPE SET	Television Receiver
TUBES	Twenty-Five
POWER SUPPLY	110-120 Volts AC-60 Cycle-RATING 2.72 Amp. @ 117 Volts AC
TUNING RANGE-CHANNELS	2 thru 13, Video IF 26.4MC, Sound IF 21.9MC.

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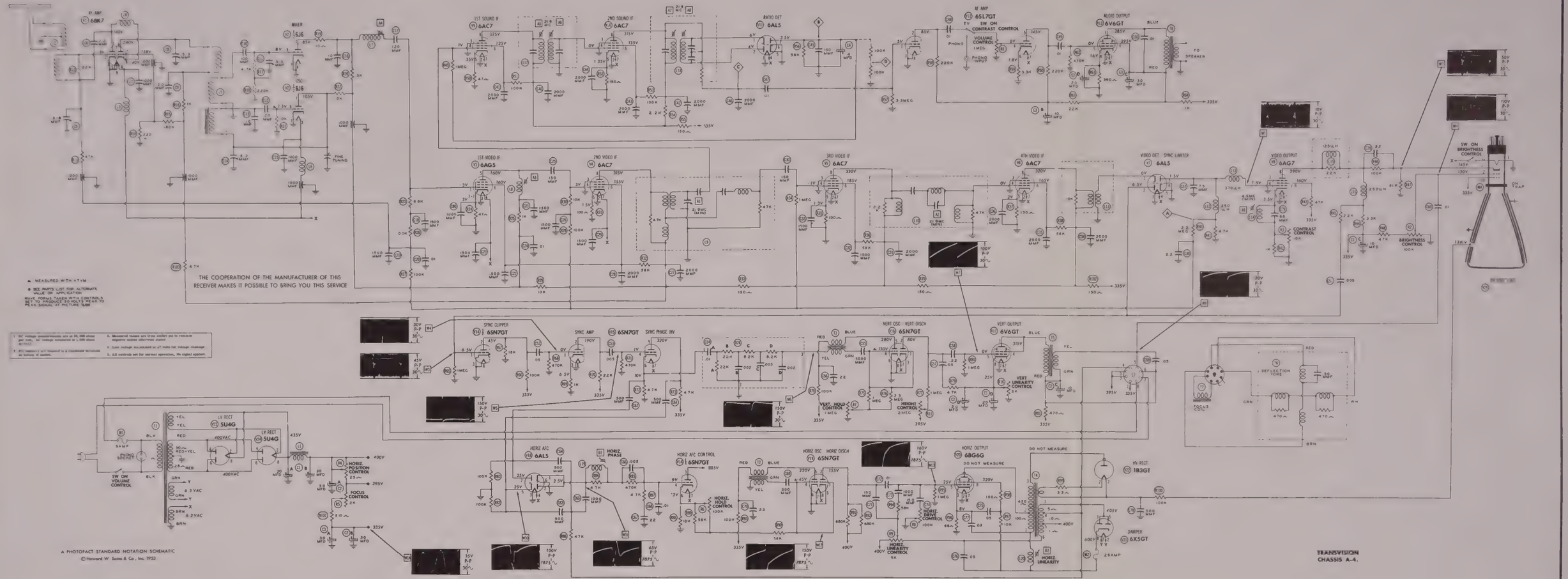
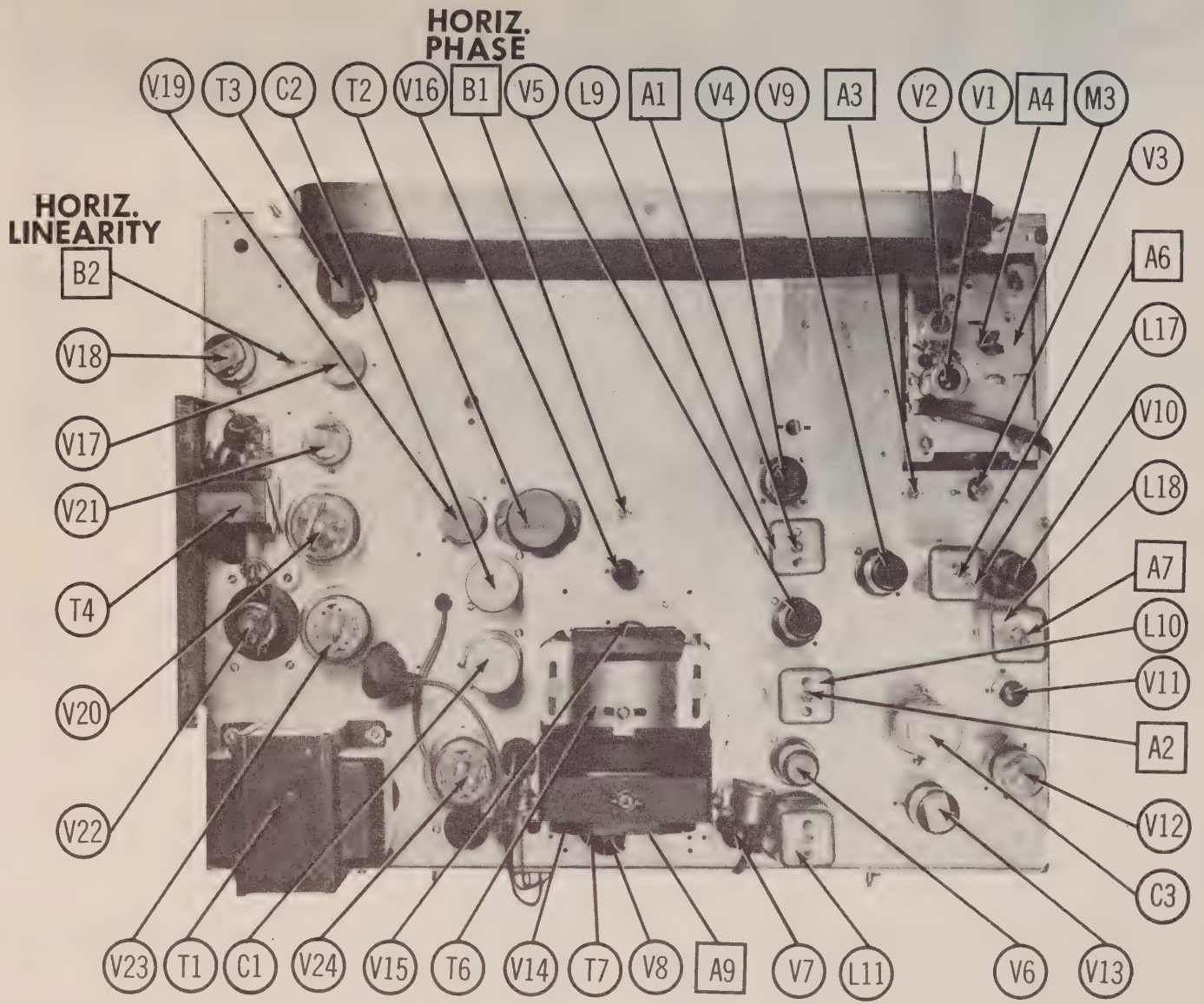
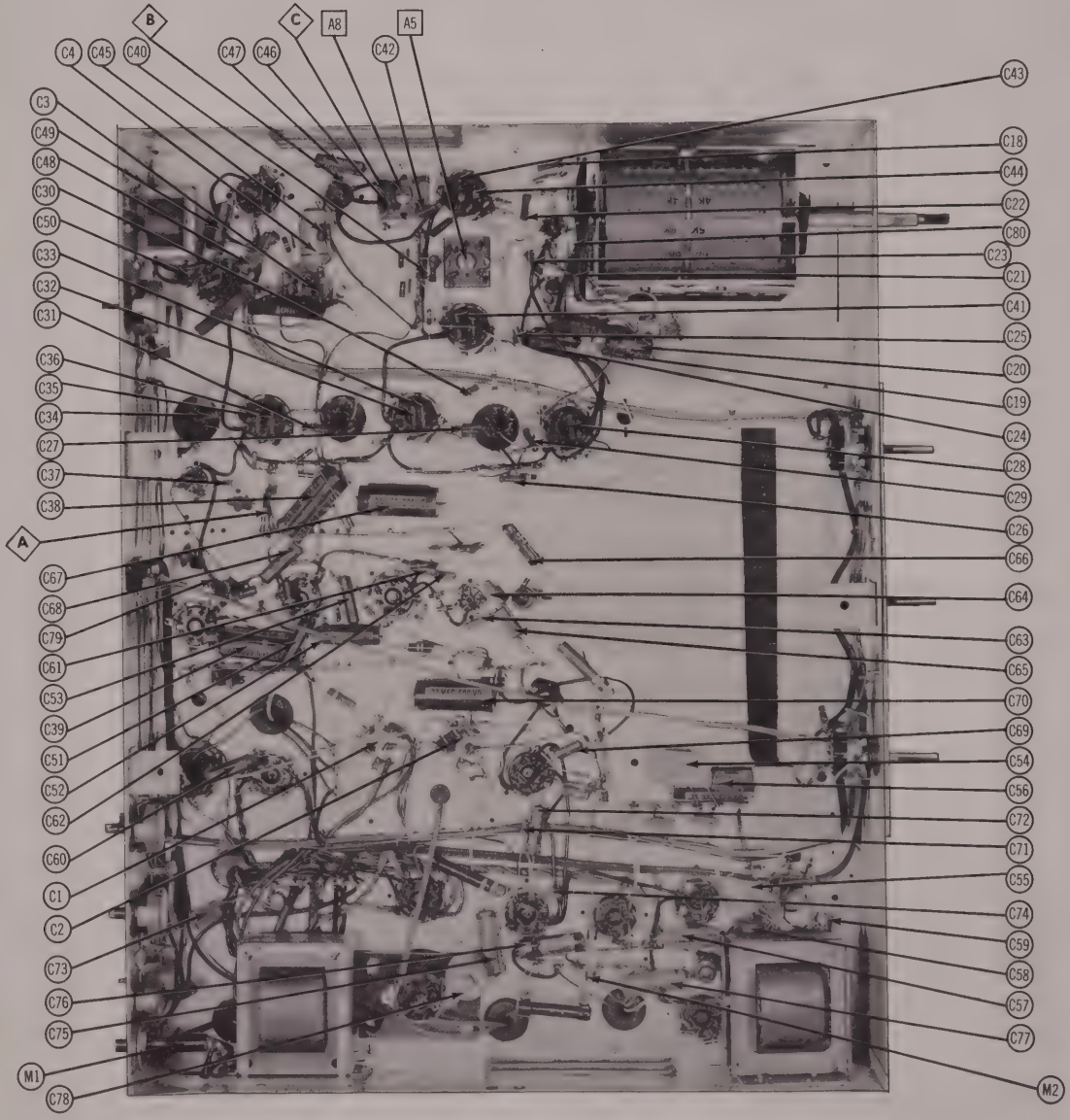

RF AMP
MIXER
OSC
FINE TUNING
1ST SOUND IF
2ND SOUND IF
RATIO DET
AF AMP
SW ON CONTRAST CONTROL
VOLUME CONTROL
AUDIO OUTPUT
TO SPEAKER
1ST VIDEO IF
2ND VIDEO IF
3RD VIDEO IF
4TH VIDEO IF
VIDEO DET SYNC LIMITER
VIDEO OUTPUT
CONTRAST CONTROL
BRIGHTNESS CONTROL
SW ON BRIGHTNESS CONTROL
ION TRAP
SYNC CLIPPER
SYNC AMP
SYNC PHASE INV
VERT OSC VERT DISCH
VERT OUTPUT
VERT LINEARITY CONTROL
VERT HOLD CONTROL
HEIGHT CONTROL
DEFLECTION YOKE
FOCUS COIL
HORIZ AFC
HORIZ PHASE
HORIZ AFC CONTROL
HORIZ HOLD CONTROL
HORIZ OSC HORIZ DISCH
HORIZ OUTPUT
DO NOT MEASURE
HORIZ LINEARITY CONTROL
HORIZ LINEARITY
HV RECT
DAMPER
LV RECT
SW ON VOLUME CONTROL
HORIZ POSITION CONTROL
FOCUS CONTROL
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
▲ MEASURED WITH VTVM
● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
WAVE FORMS TAKEN WITH CONTROLS SET TO PRODUCE 50 VOLTS PEAK TO PEAK SIGNAL AT PICTURE TUBE
A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1953
TRANSVISION CHASSIS A-4.



CHASSIS TOP VIEW

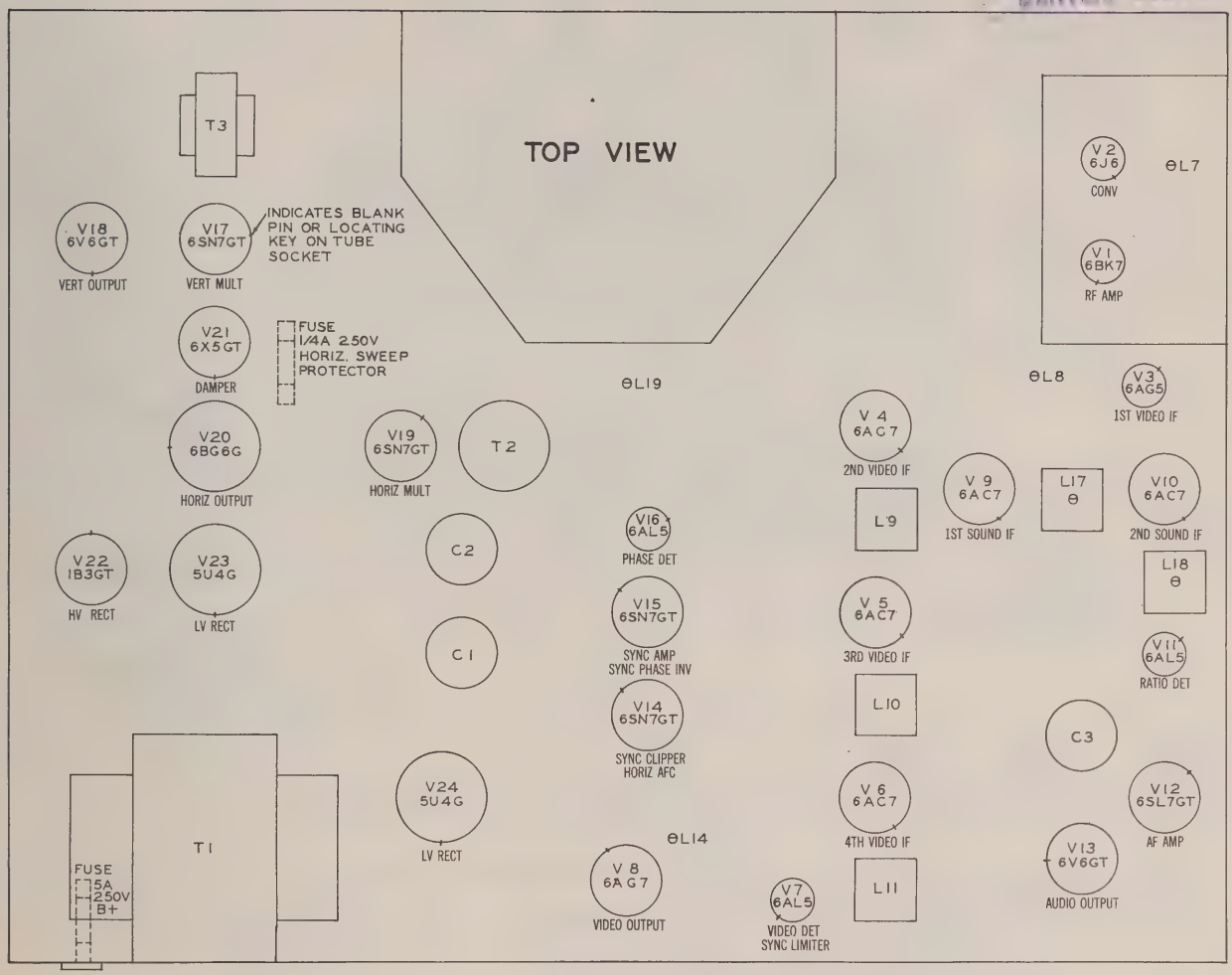
TRANSVISION
CHASSIS A-4,



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TRANSVISION
CHASSIS A-4,

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound-V23, V24 Fuse (M1)

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster-V2, V3, V4
No pic, no sound, has snow-V1, V2, V3
No pic, has sound, has raster-V5, V6, V7, V8, V25
Has pic, no sound-V9, V10, V11, V12, V13

SYNC FAILURE
No vert. sync-V15, V16
No horiz. sync-V14, V15, V18, V19
No vert. and horiz. sync-V14, V15

SWEEP FAILURE
No raster, has sound-V19, V20, V21, V22, V25 Fuse (M2)
No vertical deflection-V17
Poor vert. linearity or foldover-V16, V17
Poor horiz. linearity or foldover-V19, V20, V21
Narrow picture-V19, V20, V21, V22, V23, V24
Vert. off freq-V15, V16
Horiz. off freq.-V14, V15, V18, V19

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage.

VIDEO IF ALIGNMENT

Remove the converter tube (V2) and replace with a 6J6 which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the ungrounded side of C38. Connect the positive lead to chassis.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	Not used	21.9MC (Unmod)	Any	Use VTVM. DC probe to point ⟨A⟩. Common to chassis.	A1, A2	Adjust for MINIMUM Deflection
2.	"	"	24MC (10MC Swp)	21.9MC 22.5MC 26.4MC	"	Vert. Amp. to point ⟨A⟩. Low side to chassis.	A3, A4	Adjust for response curve similar to Fig. 1.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (±1%) resistors in series from point ⟨B⟩ to chassis. The junction of these two resistors is alignment point ⟨D⟩ as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
3.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	21.9MC (Unmod.)	Any	DC probe to point ⟨B⟩. Common to chassis.	A5, A6, A7	Adjust for maximum deflection.
4.	"	"	"	"	DC probe to point ⟨C⟩. Common to point ⟨D⟩.	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	21.9MC (450KC Swp)	21.9MC	Any	Vert. Amp. to point ⟨B⟩. Low side to chassis.	A5, A6, A7	Disconnect stabilizer capacitor C4. Adjust for curve of maximum amplitude and symmetry as in Fig. 2.
4.	"	"	"	"	"	Vert. Amp. to point ⟨C⟩. Low side to chassis.	A8	Reconnect capacitor C4. Adjust so that 21.9MC occurs at center of crossover lines as in Fig. 3. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
5.	.005MFD	High side to pin 4 (grid) of 6AG7 (V8). Low side to chassis.	4.5MC (Unmod)	Any	DC probe thru detector (Fig. 4), to pin 11 of picture tube. Common to chassis.	A9	Adjust for MINIMUM deflection.

THE RF TUNER PORTION OF THIS RECEIVER HAS BEEN PROPERLY ALIGNED AT THE FACTORY AND IS VERY STABLE. ALIGNMENT OF THIS PORTION SHOULD NOT BE REQUIRED IN THE FIELD.

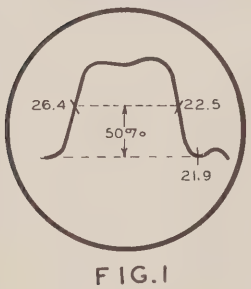


FIG. 1

FIG. 2

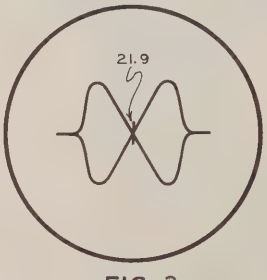


FIG. 3

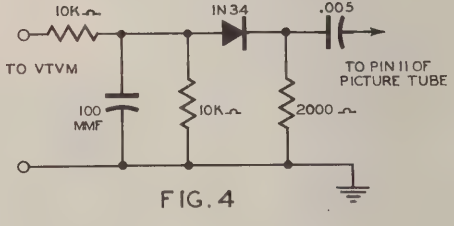
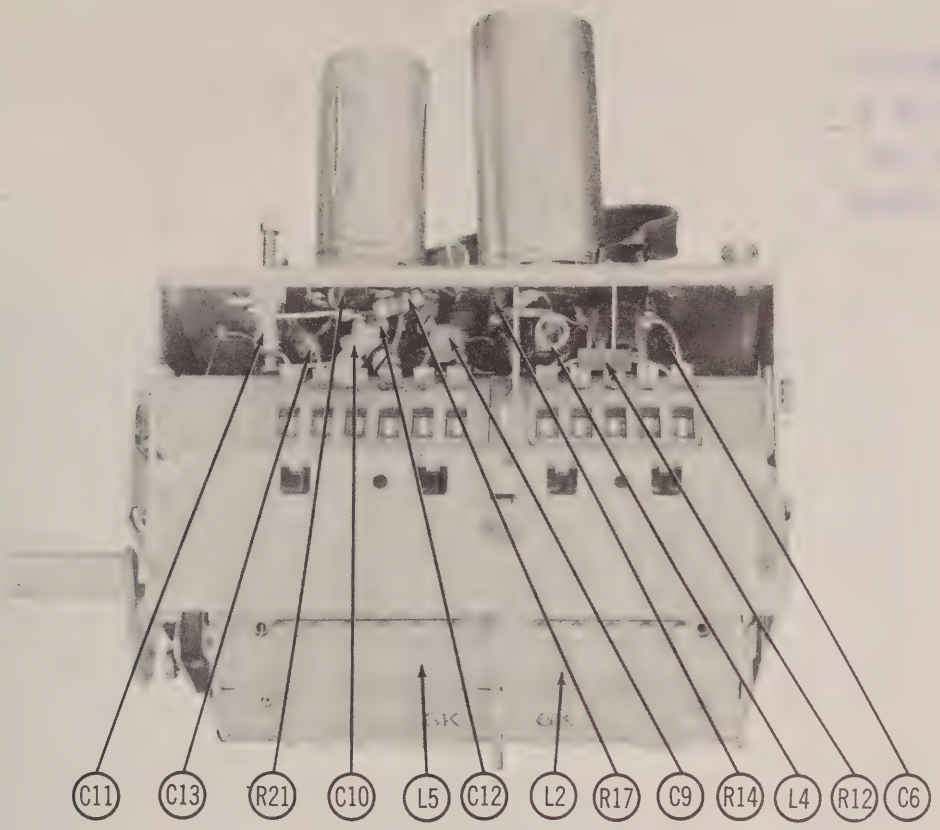
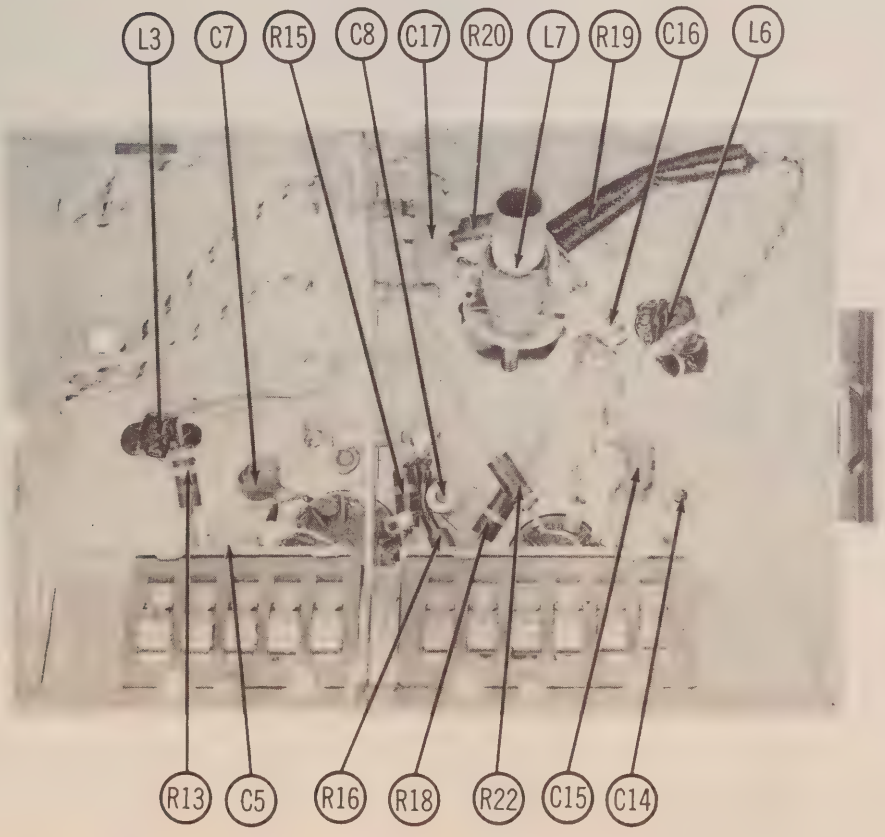


FIG. 4



RF TUNER-RIGHT SIDE

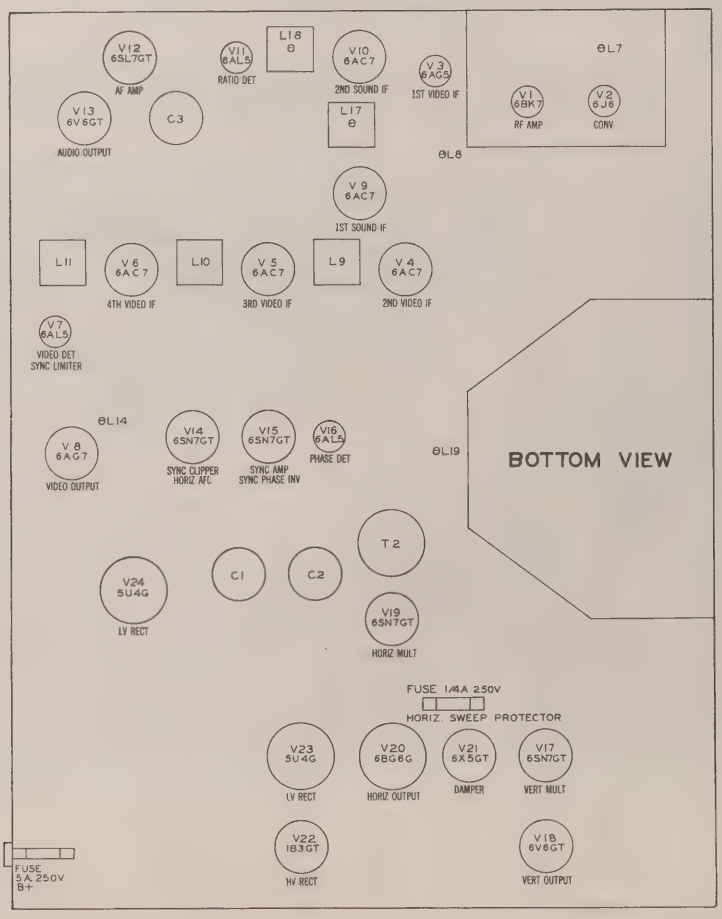


RF TUNER-BOTTOM VIEW

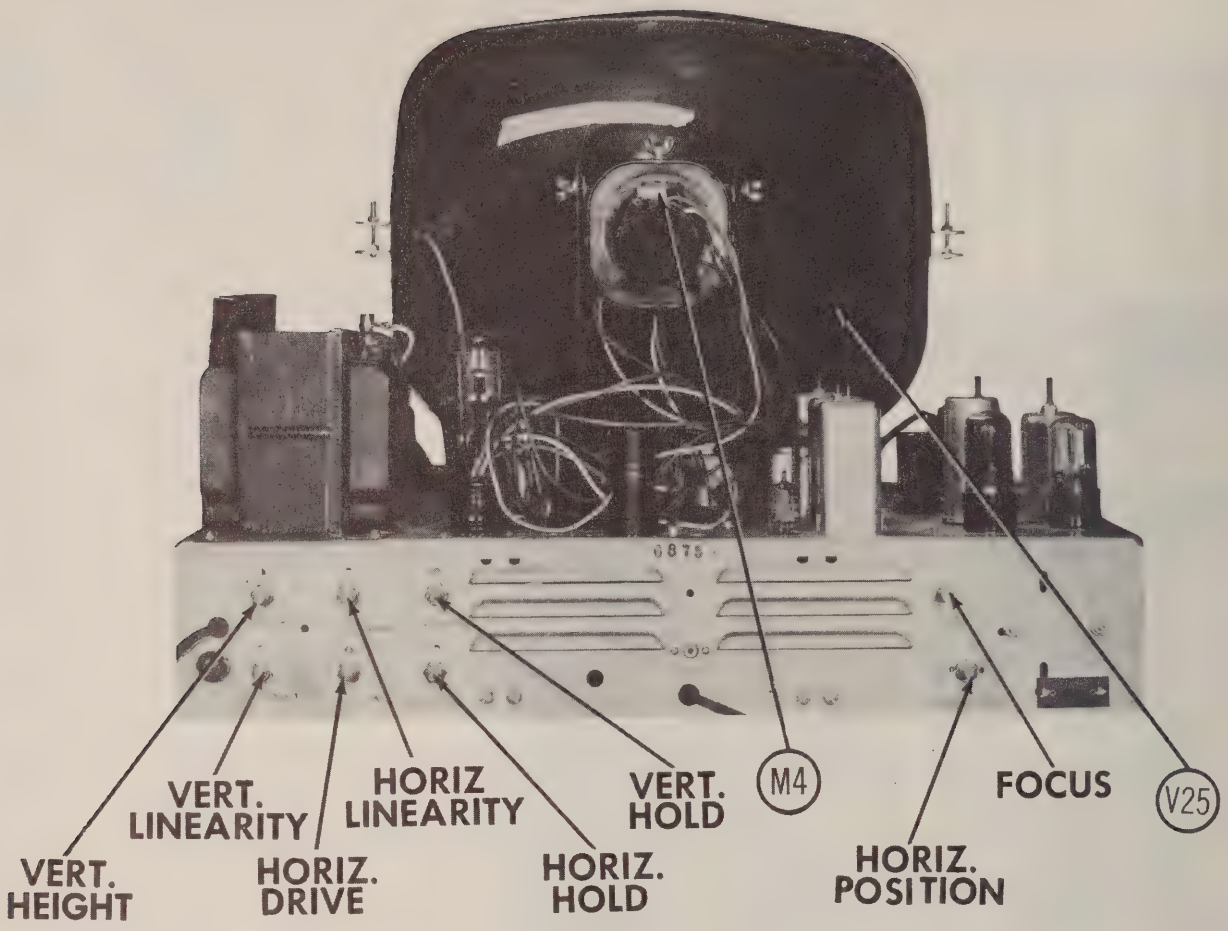
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BK7	INF	2.3Meg	0Ω	.1Ω	0Ω	†6.6KΩ	†108KΩ	INF	0Ω
V 2	6J6	†21KΩ	†26KΩ	.1Ω	0Ω	225KΩ	10KΩ	0Ω		
V 3	6AG5	2.4Meg	47Ω	0Ω	.1Ω	†12KΩ	†57KΩ	47Ω		
V 4	6AC7	0Ω	0Ω	0Ω	2.3Meg	100Ω	†57KΩ	.1Ω	†950Ω	
V 5	6AC7	0Ω	0Ω	0Ω	3.2Meg	100Ω	†57KΩ	.1Ω	†800Ω	
V 6	6AC7	0Ω	0Ω	0Ω	.2Ω	150Ω	†57KΩ	.1Ω	†650Ω	
V 7	6AL5	.2Ω	1Meg	0Ω	.1Ω	0Ω	0Ω	4.7KΩ		
V 8	6AG7	0Ω	0Ω	0Ω	4.7KΩ	450Ω	†48KΩ	.1Ω	†3.8KΩ	
V 9	6AC7	0Ω	0Ω	0Ω	1.1Meg	47Ω	†100KΩ	.1Ω	†650Ω	
V 10	6AC7	0Ω	0Ω	0Ω	.1Ω	150Ω	†103KΩ	.1Ω	†2.8KΩ	
V 11	6AL5	INF	INF	0Ω	.1Ω	0Ω	0Ω	56KΩ		
V 12	6SL7GT	3.3Meg	†240KΩ	0Ω	24KΩ	†240KΩ	3.3KΩ	.1Ω	0Ω	
V 13	6V6GT	0Ω	0Ω	†1.7KΩ	†1.5KΩ	470KΩ	1Meg	.1Ω	390Ω	
V 14	6SN7GT	1Meg	18KΩ	0Ω	INF	†450Ω	10KΩ	.1Ω	0Ω	
V 15	6SN7GT	470KΩ	†22KΩ	1KΩ	470KΩ	†5.2KΩ	4.7KΩ	.1Ω	0Ω	
V 16	6SN7GT	1.1Meg	1.4Meg	0Ω	1.1Meg	†100KΩ	0Ω	.1Ω	0Ω	
V 17	6V6GT	INF	.1Ω	†1.5KΩ	†1.5KΩ	1Meg	INF	0Ω	1.6KΩ	
V 18	6AL5	INF	INF	0Ω	.1Ω	100KΩ	0Ω	100KΩ		
V 19	6SN7GT	80KΩ	†340KΩ	0Ω	80KΩ	†100KΩ	0Ω	0Ω	.1Ω	
V 20	6BG6G	INF	0Ω	68Ω	†1.2KΩ	1Meg	†57KΩ	.1Ω	#10KΩ	TOP CAP #135Ω
V 21	6X5GT	INF	INF	†120Ω	†119Ω	†120Ω	INF	INF	INF	
V 22	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								TOP CAP #585Ω
V 23	5V4G	INF	42KΩ	INF	30Ω	INF	28.4Ω	INF	42KΩ	
V 24	5U4G	INF	42KΩ	INF	30Ω	INF	28.4Ω	INF	42KΩ	
V 25	17BP4A	0Ω	41KΩ	PIN 10 †450Ω	PIN 11 55KΩ	PIN 12 .1Ω				

† MEASURED FROM PIN 8 OF V23
# MEASURED FROM PIN 8 OF V21



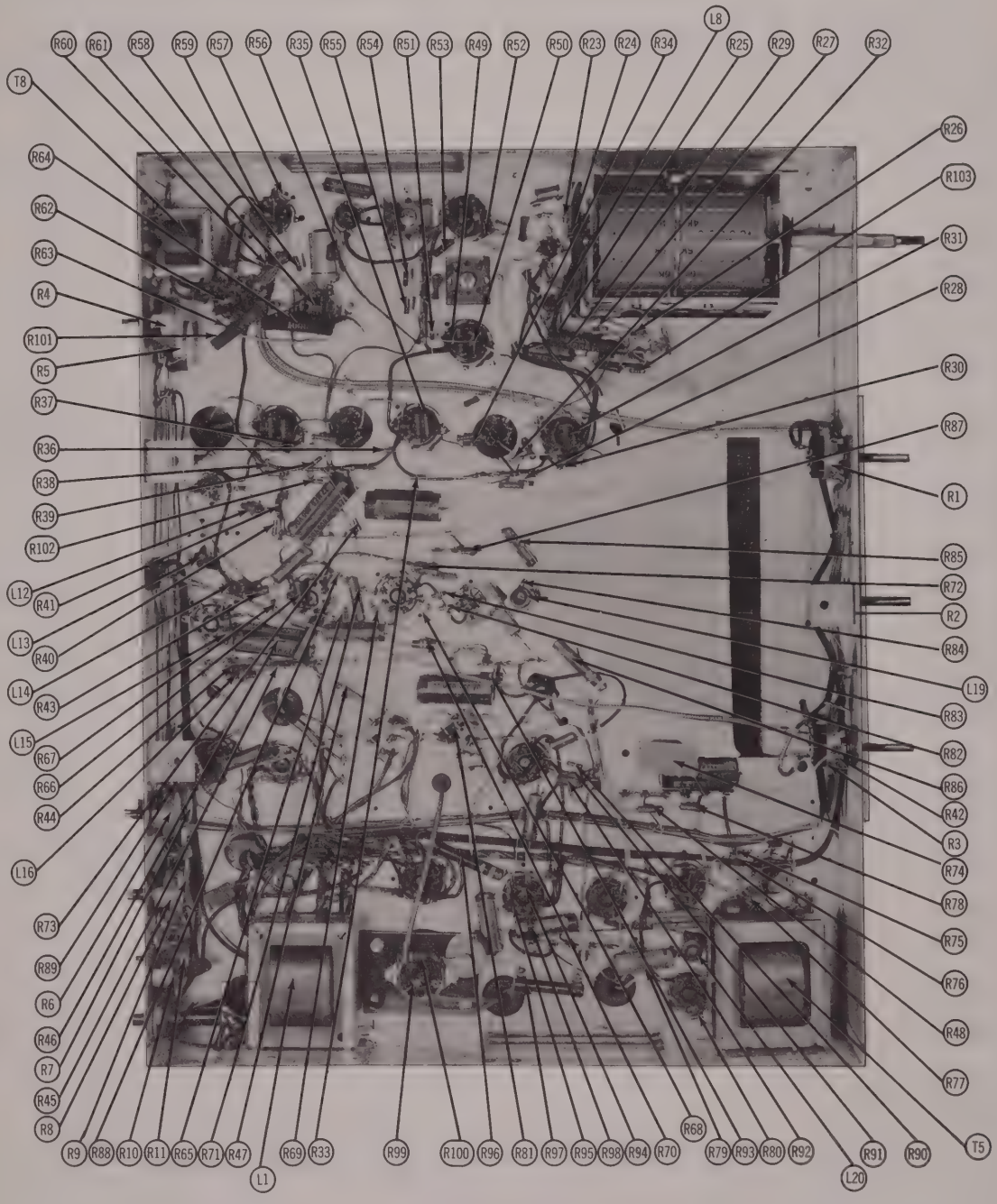
TUBE PLACEMENT CHART



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern. Turn the horizontal hold control to synchronize the picture horizontally. Adjust the horizontal drive control counter-clockwise as far as possible without crowding the picture. If a fold-over occurs in the picture that cannot be removed by adjusting the drive control. Adjust the horizontal phase slug (B1). Otherwise leave B1 at approximately the center of its range. Set the horizontal linearity slug (B2) at the approximate center of its range. Adjust the horizontal linearity control for a picture that is symmetrical from left to right. If proper linearity cannot be obtained with the control readjust B2 to correct the non-linearity.



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

TRANSVISION
CHASSIS A-4.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: Transvision PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V1A	RF Amplifier	6BK7	6BK7	9AJ	
B	RF Amplifier	6BQ7	6BQ7	9AJ	
V3	Converter	6J8	6J8	7BP	
V3	1st. Video IF Amp.	6AG5	6AG5	7BD	
V4	2nd. Video IF Amp.	6AC7	6AC7	6Q	
V5	3rd. Video IF Amp.	6AC7	6AC7	6Q	
V6	4th. Video IF Amp.	6AC7	6AC7	6Q	
V7	Video Detector - Sync Limiter	6AL5	6AL5	6BT	
V8	Video Output	6AG7	6AG7	8Y	
V9	1st. Sound IF Amp.	6AC7	6AC7	6Q	
V10	2nd. Sound IF Amp.	6AC7	6AC7	6Q	
V11	Ratio Detector	6AL5	6AL5	6BT	
V12	AF Amplifier	6SL7GT	6SL7GT	8BD	
V13	Audio Output	6V6GT	6V6GT	7S	
V14	Sync Clipper - Horiz. AFC Control	6SN7GT	6SN7GT	8BD	
V15	Sync Amplifier - Sync Phase Inv.	6SN7GT	6SN7GT	8BD	
V16	Vert. Oscillator - Vert. Discharge	6SN7GT	6SN7GT	8BD	
V17	Vert. Output	6V6GT	6V6GT	7S	
V18	Horiz. Phase Det.	6AL5	6AL5	6BT	
V19	Horiz. Oscillator - Horiz. Discharge	6SN7GT	6SN7GT	8BD	
V20	Horiz. Output	6BG6G	6BG6G	5BT	
V21	Damper	6X5GT	6X5GT	5S	
V22	HV Rectifier	1B3GT	1B3GT	3C	
V23	LV Rectifier	5U4G	5U4G	5T	
V24	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: Transvision PART No.	REPLACEMENT DATA: SYLVANIA PART No.	RTMA BASE TYPE	NOTES
V25		17BP4A 17BP4 ① 17HP4 ② 17RP4 ②	12D 12D 12C 12C	① Circuit changes necessary

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Transvision PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	⌀30	475		90	AFH4-124		C041		FP396	TVL-3840
B	⌀30	475			PRS25/25		BR302A		TC26	TVA-1205
C	⌀10	475								
D	30	25								
C2A	⌀30	475		90	AFH4-124		C041		FP396	TVL-3840
B	⌀30	475			PRS25/25		BR302A		TC26	TVA-1205
C	⌀10	475								
D	20	25								
C3A	⌀30	475		90	AFH4-124		C041		FP396	TVL-3840
B	⌀30	475			PRS25/25		BR302A		TC26	TVA-1205
C	⌀30	475								
D	20	25								
C4	4	50	230		PRS150/4		BR550		TC30	TVA-1303
C5	3-8					829-10				
C6	2.2					TCZ-2.2				5TCCB-V22
C7	1000				BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1
C8	.5-3					829-5			CT585A	
C9	120				SU120	D6-121	TM5T12	GP2K-121	UC-5312	5GA-T12
C10	100				SU100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1
C11	.5-3					829-3			CT585A	
C12	30				S12ONP0	TCZ-30		NP0K-300	ZT-542	5TCC-Q2
C13	10				SU0N750	TCN-10		N750K-100	NT-541	5TCU-Q1
C14	.5-3					829-5			CT585A	
C15	1000				BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1
C16	10				SU0NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1
C17	120				SU120	D6-121	TM5T12	GP2K-121	UC-5312	5GA-T12
C18	1500				SU150	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15
C19	1500				SU1500	D6-153	TM5D15	GP3L-153	UC-5315	5HK-D15
C20	.01	600	79		P688-01	D6-103	PTE681	GP2-333-103	PT611	6TM-S1
C21	1500				SU1500	D6-153	TM5D15	GP2L-152	UC-5215	5HK-D15
C22	1500				SU1500	D6-153	TM5D15	GP3L-153	UC-5315	5HK-D15
C23	1500				SU1500	D6-153	TM5D15	GP2L-152	UC-5215	5HK-D15
C24	.01	600	79		P688-01	D6-103	PTE681	GP2-333-103	PT611	6TM-D15
C25	150		72		SU150	D6-151	TM5T15	GP2K-151	UC-5215	5GA-T15
C26	1500				SU1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15
C27	2000		76		SI2000	D6-202	TM5D2	GP2-333-202	UC-522	5HK-D2
C28	2000		76		SI2000	D6-202	TM5D2	GP2-333-202	UC-522	5HK-D2
C29	1500				SU1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15
C30	150		72		SU150	D6-151	TM5T15	GP2K-151	UC-5215	5GA-T15
C31	2000		76		SI2000	D6-202	TM5D2	GP2-333-202	UC-522	5HK-D2
C32	1500				SU1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15
C33	1500				SU1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15
C34	2000		76		SI2000	D6-202	TM5D2	GP2-333-202	UC-522	5HK-D2
C35	2000		76		SI2000	D6-202	TM5D2	GP2-333-202	UC-522	5HK-D2
C36	2000		76		SI2000	D6-202	TM5D2	GP2-333-202	UC-522	5HK-D2
C37	7.5							NP0K-7R5		
C38	.22	SM			684-25		PTE6P25		PT6025	6TM-P25
C39	.22	SM			684-25		PTE6P25		PT6025	6TM-P25
C40	2000		76		SI2000	D6-202	TM5D2	GP2-333-202	UC-522	5HK-D2
C41	2000		76		SI2000	D6-202	TM5D2	GP2-333-202	UC-522	5HK-D2
C42	2000		76		SI2000	D6-202	TM5D2	GP2-333-202	UC-522	5HK-D2
C43	2000		76		SI2000	D6-202	TM5D2	GP2-333-202	UC-522	5HK-D2
C44	2000		76		SI2000	D6-202	TM5D2	GP2-333-202	UC-522	5HK-D2
C45	150		72		SI150	D6-151	TM5T15	GP2K-151	UC-5215	5GA-T15
C46	2000		76		SI2000	D6-202	TM5D2	GP2-333-202	UC-522	5HK-D2
C47	.01	600	79		P688-01	D6-103	PTE681	GP2-333-103	PT611	6TM-S1
C48	.01	600	79		P688-01	D6-103	PTE681	GP2-333-103	PT611	6TM-S1

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Transvision PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C49	.01	600	79	P688-01	D6-103	PTE681	GP2-333-103	PT611	6TM-S1	
C50	.01	600	79	P688-01	D6-103	PTE681	GP2-333-103	PT611	6TM-S1	
C51	.005	600	77	P686-005	D6-506	PTE6D5	GP2-333-502	PT625	6TM-D5	
C52	.05	600	74	P688-05	DF-503	PTE685		PT615	6TM-S5	
C53	.005	600	77	P686-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C54A	.01			P688-01		PTE681	GP2-333-103	PT611	6TM-S1	
B	.002		⌀1259	P688-002	⌀PC-101	PTE6D2	GP2-333-202	PT622	6TM-D2	
C	.005			P686-005		PTE6D5	GP2-333-502	PT625	6TM-D5	
D	.005			P686-005		PTE6D5	GP2-333-502	PT625	6TM-D5	
C55	5000	500	1150	1484-005		1DR5D5		MCB485	MS-25	
C56	.22	600		684-25		PTE6P25		PT6025	6TM-P25	
C57	.05	600	74	P688-05	DF-503	PTE685		PT615	6TM-S5	
C58	.22	600		684-25		PTE6P25		PT6025	6TM-P25	
C59	.05	600	74	P688-05	DF-503	PTE685		PT615	6TM-S5	
C60	.01	600	79	P688-01	D6-103	PTE681	GP2-333-103	PT611	6TM-S1	
C61	500	500	73	1468-0005	D6-501	5W5T5	GP2K-501	MC245	1PM-35	
C62	500	500	73	1468-0005	D6-501	5W5T5	GP2K-501	MC245	1PM-35	
C63	500	500	73	1468-0005	D6-501	5W5T5	GP2K-501	MC245	1PM-35	
C64	500	500	73	1468-0005	D6-501	5W5T5	GP2K-501	MC245	1PM-35	
C65	1000	500	82	1468-0001	D6-102	1W5D1	GP2L-102	MC255	1PM-21	
C66	.005	600	77	P686-006	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C67	.22	600		684-25		PTE6P25		PT6025	6TM-P25	
C68	.01	600	79	P688-01	D6-103	PTE681	GP2-333-103	PT611	6TM-S1	
C69	500	500	73	1469-0005		5R5T5		MCB545	MS-35	
C70	.22	600		684-25		PTE6P25		PT6025	6TM-P25	
C71	150		72	SI150	D6-151	TM5T15	GP2K-151	UC-5315	5GA-T15	
C72	.01	600	79	P688-01	D6-103	PTE681	GP2-333-103	PT611	6TM-S1	
C73	1000	500	85	1468-001	D6-102	1W5D1	GP2L-102	MC255	1PM-21	
C74	150		72	SI150	D6-151	TM5T15	GP2K-151	UC-5315	5GA-T15	
C75	.05	600	74	P688-05	DF-503	PTE685		PT615	6TM-S5	
C76	.05	600	74	P688-05		PTE685		PT615	6TM-S5	
C77	.03	1000		P1088-03		PTE1683		PT1613	MB-183	
C78	500	20000	330	HV20C	TV3-502	MM-C3075	413-501		30DX-T5	
C79	68						N750L-680			
C80	1000			SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	

⌀ Items C54A, C54B, C54C, C54D, R74A, R74B, R74C, R74D and C54A, C54B, C54C, C54D are combined in one unit.

CONTROLS

ITEM No	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Transvision PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1Meg	½	28	Q13-137	AG-63-Z	B-70-S	U-53	Volume
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	Not Req.	SW3	Not Req.	UB-38	Attach to R1A
R2A	100KΩ	½	328	QU-128	AG-49-S	B-40-S	U-41	Brightness
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R2A
C	Switch		Not Req.	76-1	SW3	Not Req.	UB-38	Attach to R2A
R3A	10KΩ	½	1149		AG-30-V	B-17	U-19	Contrast
B	Shaft		Not Req.		FS-3	Not Req.	Not Req.	Attach to R3A
C	Switch		Not Req.		SW8-1	KB-3	UB-38	Attach to R3A
R4A	25Ω	2	644	W-25	A43-25	VK-111	R35L	Horiz. position-wire wound
B	Shaft		Not Req.	Not Req.	FK3-1/4	Not Req.	Not Req.	Attach to R4A
R5A	2000Ω	4	326		A10-2000	SVP-908	M2MP	Focus-Wire wound
B	Shaft		Not Req.		FK3-1/4	Not Req.	Not Req.	Attach to R5A
R6A	100KΩ	½	36	QU-128	AG-49-S	AB-40	SU-41	Horiz. Hold
B	Shaft		Not Req.	Not Req.	FK3-1/4	AK-1	Not Req.	Attach to R6A
R7A	1Meg	½	374	QU-137	AG-61-S	AB-69	SU-54	Vert. Hold
B	Shaft		Not Req.	Not Req.	FK3-1/4	AK-1	Not Req.	Attach to R7A
R8A	100KΩ	½	36	QU-128	AG-49-S	AB-40	SU-41	Horiz. Drive
B	Shaft		Not Req.	Not Req.	FK3-1/4	AK-1	Not Req.	Attach to R8A
R9A	5000Ω	½	373	QU-116	AG-19-S	AB-10	SU-14	Horiz. Linearity
B	Shaft		Not Req.	Not Req.	FK3-1/4	AK-1	Not Req.	Attach to R9A
R10A	5000Ω	½	373	QU-114	AG-19-S	AB-10	SU-14	Vert. Linearity
B	Shaft		Not Req.	Not Req.	FK3-1/4	AK-1	Not Req.	Attach to R10A
R11A	2Meg	½	97	QU-139	AG-83-S	AB-75	SU-56	Height
B	Shaft		Not Req.	Not Req.	FK3-1/4	AK-1	Not Req.	Attach to R11A

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Transvision PART No.	IRC PART No.	NOTES
R12	23KΩ	½		BTS-22K	
R13	47KΩ	½			
R14	220KΩ 5%	½			
R15	180KΩ 5%	½			
R16	1000Ω	½		BTS-1000	
R17	4700Ω	½		BTS-4700	
R18	220KΩ	½			
R19	10Ω	½			
R20	15KΩ	½		BTS-15K	
R21	10KΩ	½		BTS-10K	
R22	10KΩ	½		BTS-10K	
R23	6800Ω	½	49		
R24	47Ω	½	337		
R25	1000Ω	½	45	BTS-1000	
R26	100KΩ	½	56	BTS-100K	
R27	100KΩ	½	56	BTS-100K	
R28	100KΩ	½	56	BTS-100K	
R29	10KΩ	10	344	1-3/4A-10K	
R30	10KΩ	½	50	BTS-10K	
R31	1000Ω	½	41	BTS-1000	
R32	56KΩ	½	54	BTS-56K	
R33	150Ω	½	42	BTS-150	
R34	1Meg	½	60		
R35	100Ω	½	41	BTS-100	
R36	56KΩ	½	54	BTS-56K	
R37	150Ω	½	43	BTS-150	
R38	56KΩ	½	54	BTS-56K	
R39	150Ω	½	42	BTS-150	
R40	2.2Meg	½		BTS-2.2Meg	
R41	4700Ω	½	48	BTS-4700	
R42	1000Ω	½	45	BTS-1000	
R43	47KΩ	1		BTA-47K	
R44	3300Ω	2	643	BTB-3300	

RESISTORS (CONT.)

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Transvision PART No.	IRC PART No.	NOTES
R45	2200Ω	½	46	BTS-2200	
R46	100KΩ	½	56	BTS-100K	
R47	91KΩ 5%	1		BTA-91K 5%	
R48	47KΩ	1	53	BTS-47K	
R49	1Meg	½	60		
R50	47Ω	1	337		
R51	100KΩ	½	56	BTS-100K	
R52	150Ω	½	43	BTS-150	
R53	100KΩ	½	56	BTS-100K	
R54	2200Ω	½	46	BTS-2200	
R55	150Ω	½	43	BTS-150	
R56	56KΩ	½	54	BTS-56K	
R57	3.3Meg	½	62	BTS-3.3Meg	
R58	220KΩ	½	57	BTS-220K	
R59	3300Ω	½	47	BTS-3300	
R60	220KΩ	½	57	BTS-220K	
R61	22KΩ	1	1007	BTS-22K	
R62	470KΩ	½	59	BTS-470K	
R63	39Ω	½	43	BTS-39Ω	
R64	1000Ω	10	348	1-3/4A-1000	
R65	1Meg	½	60	BTS-1Meg	
R66	100KΩ	1	66	BTA-100K	
R67	18KΩ	½		BTS-18K	
R68	470KΩ	½	59	BTS-470K	
R69	1000Ω	½	45	BTS-1000	
R70	22KΩ	1	1007	BTA-22K	
R71	470KΩ	½	59	BTS-470K	
R72	4700Ω	½	48	BTS-4700	
R73	4700Ω	½	48	BTS-4700	
R74A	22KΩ			BTS-22K	
B	22KΩ		⌀1259	BTS-22K	
C	8200Ω			BTS-8200	
D	8200Ω			BTS-8200	

RESISTORS (CONT.)

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Transvision PART No.	IRC PART No.	NOTES
R75	1Meg	½	60	BTS-1Meg	
R76	3.3Meg	½	62	BTS-3.3Meg	
R77	1Meg	½	60	BTS-1Meg	
R78	100KΩ	½	56	BTS-100K	
R79	4700Ω	½	48	BTS-4700	
R80	1Meg	½	60	BTS-1Meg	
R81	470Ω	1	641	BTA-470	
R82	100KΩ	½	56	BTS-100K	
R83	100KΩ	½	56	BTS-100K	
R84	4700Ω	½	48	BTS-4700	
R85	470KΩ	½	59	BTS-470K	
R86	47KΩ	2	1004	BTB-47K	
R87	4700Ω	½	48	BTS-4700	
R88	10KΩ	½	50	BTS-10K	
R89	56KΩ	½	54	BTS-56K	

⌀ Items R74A, R74B, R74C, R74D, C54A, C54B, C54C, C54D are combined in one unit.

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Transvision PART No.	IRC PART No.	NOTES
R90	56KΩ	½	54	BTS-56K	
R91	680KΩ	1	1005	BTA-680K	
R92	680KΩ	1	1005	BTA-680K	
R93	100KΩ	1	66	BTA-100K	
R94	56KΩ	½	54	BTS-56K	
R95	1Meg	½	60	BTS-1Meg	
R96	68Ω	2	1395	BW-2-68	
R97	10KΩ	10	344	1-3/4A-10K	
R98	100Ω	½	41		
R99	3.3Ω	1	335		
R100	100KΩ	1	66		
R101	5ΩΩ	2	516		
R102	150Ω	½	42	BTS-150	
R103	4700Ω	½	48	BTS-4700	

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: Transvision PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC Ⓖ2.72A	800VCT .300ADC	5VAC Ⓖ 6A	6.3VAC Ⓖ 5.5A SEC. 4 6.3VAC Ⓖ 10A					R-40A

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: Transvision PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T2	1.7Ω	3.5Ω	307	A-8120	A-4002		A-98X	Horiz. Osc. Trans.
T3	140Ω	1400Ω	306	A-8121	A-3000	TBO-3	A-97X	Vert. Osc. Trans.
T4	550Ω tap Ⓐ, 100Ω	16Ω tap Ⓐ, 11Ω SEC. 2 0Ω	1279		HVO-10 ①			Horiz. Output Trans.
T5	560Ω	8Ω	305 ①	A-8123	A-3037	TSO-11	A-102X	Vert. Output Trans.
T6A	12Ω		1283	DY-8 ②	MDF-70 ②	TY-2 ②	Y-12 ②	Horiz. Deflection Coils
B	52Ω							Vert. Deflection Coils
T7	400Ω		309	FC-12	MF-3		B-365-S	Focus Coil

① Connected as Auto Trans.
② Use original deflection coil network
③ Reverse back plate

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: Transvision PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T8	2.8KΩ	3-4Ω	200Ω	.55Ω		A-3825 ①	A-3018 ①	RO-302	S-1X	① Drill one new mounting hole.

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D.C. RESISTANCE	RATINGS: INDUCTANCE (D CURRENT 1000 ᵐA)	REPLACEMENT DATA: Transvision PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No
L1	.300A	104Ω	5 Hy.					

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: Transvision PART No.	REPLACEMENT DATA: MERIT PART No.	NOTES
L2	Ant. Coils	0Ω				
L3	Fil. Choke	0Ω				
L4	Neutralizing Coil	0Ω				
L5	RF, Mixer Grid & Osc. Coils	0Ω				
L6	Fil. Choke	0Ω				
L7	1st. Video IF	1Ω				
L8	2nd. Video IF	.2Ω		603	TV-112*	
L9	3rd. Video IF & Sound Take-off	.2Ω		175		Prl. tapped - includes(2) 4.7KΩ resistors & 2 capacitors
L10	4th. Video IF	.2Ω	.2Ω	174		Includes trap, also includes 2.2KΩ & 4.7KΩ resistors & one capacitor
L11	5th. Video IF	.2Ω	.2Ω	176		Includes 10KΩ resistor
L12	Shunt Peaking Coil	5Ω		18	TV-185	250 Microhenries
L13	Series Peaking Coil	7Ω		603	TV-112*	370 Microhenries
L14	4.5MC Trap	.7Ω		1155	TV-151	1-3/4A-1000
L15	Series Peaking Coil	6.5Ω		17	TV-183	135 Microhenries, wound 22KΩ resistor
L16	Shunt Peaking Coil	5Ω		18	TV-185	250 Microhenries
L17	Sound IF	.2Ω	.1Ω	318		
L18	Ratio Det.	.2Ω	.2DCT	317		Includes resistor
L19	Horiz. Phase Coil	35Ω		377	MWC-1 *	
L20	Horiz. Lin.	35Ω		377	MWC-1 *	

* Enlarge mounting hole.

PARTS LIST CONTINUED ON PAGE 15

PARTS LIST AND DESCRIPTIONS (Continued)

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Transvision PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	5A 250V			312005	341001	MTH-5	HKP
M2	3AG P/T	1/4A. 250V.			318.250		GJV-1/4	

PROPERTY OF
E. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORAD

MISCELLANEOUS

ITEM No.	PART NAME	Transvision PART No.	NOTES
M3	RF Tuner		
M4	Ion Trap		